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A Paper

ON

DISORDERS OF THE SYMPATHETIC NERVOUS SYSTEM AND THEIR RESPONSE TO MEDICAL AND SURGICAL TREATMENT *

BY

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A hundred years ago the first glimmerings which heralded the dawn of modern neurology are recognizable. Periods of activity, which from time to time characterize all the sciences, are determined by discoveries which constitute the milestones of progress; and the study of history, quite apart from its inherent interest, is often helpful in enabling us the better to appreciate current problems. A brief reference to the progress of neurology during the past century is instructive by way of introduction and is justified by the occasion.

The Birth and Progress of Neurology

Sir Charles Bell[1] reported his observations upon the functions of the spinal nerve roots and peripheral nerves—observations which have been compared in importance with those of Harvey upon the circulation of the blood—little more than a hundred years ago (1811). Waller,[2] in 1852, published his classical work on secondary degeneration; and Broca[3] nine years later (1861) initiated the doctrine of localization of function in the cortex of the brain when he showed that articulate speech is abolished by disease which destroys that particular region with which we now associate his name. These three discoveries were, I submit, chiefly responsible for the remarkable progress in our knowledge of the nervous system during the latter half of the nineteenth century. They may be said, indeed, to constitute the birth of neurology as a science.

Thus it was that the attention of the clinicians was directed to the problems of localization, the correlation of symptomatology with morbid anatomy, the differentiation of diseases and clinical entities, and the significance of physical signs. New possibilities too were opened up to the physiologists, who applied themselves to the investigation of function by experimental methods, simplified by the introduction of chloroform in 1847 and antiseptics in 1867. They were thus able to corroborate and extend the conclusions arrived at by the clinicians. With the introduction of the selective staining methods devised by Golgi, Marchi, Weigert, and Nissl, the neurone conception was gradually evolved, and the anatomists and pathologists added greatly to the existing state of knowledge as to the anatomy of the brain, spinal cord, and peripheral nerves, the course of nerve tracts, the histology of the nerve cell, and the architectural structure of the cerebral cortex. But as the nineteenth century drew towards its close there were indications that morbid anatomy had had its day and that a new era was dawning in which physiological conceptions were replacing the more strictly anatomical outlook. The names of the two great English masters—Hughlings Jackson, the observer and philosopher, and Sir Charles Sherrington, the physiologist and investigator—will ever be remembered in this connexion. Again, an impetus was given to the psychological aspect of disease by the studies of Dubois, Déjerine, Janet, and others; and the hypotheses of Freud and his successors opened up unexplored regions and methods of approach which gave new life to clinical psychology. Let us leave this reference to neurological progress as we find it at the end of the nineteenth century and turn to the autonomic nervous system, which at that time began to engage attention.

* Read in opening a discussion in the Section of Neurology at the Centenary Meeting of the British Medical Association, London, 1932.

Knowledge of the Autonomic System in its Infancy

The choice of subject for this Centenary Meeting would appear to be singularly appropriate, for it requires no prophetic acumen to predict that we are on the threshold of a period in which the activities and disturbances of the autonomic system will occupy a progressively more prominent place in the considerations of the clinician. It is indeed more than probable that increasing knowledge of its reactions and disorders will profoundly modify our existing conceptions of disease. A vast literature has been accumulating which demands sifting and correlating from the point of view of those of us who are of necessity primarily interested in the possibilities of its practical application.

Prior to the last few years but little attention was paid by the clinician to the autonomic nervous system. Nor is this surprising when the lack of anatomical and physiological knowledge necessary for scientific symptomatic interpretation is recalled. The gross anatomy gives the impression of extraordinary complexity; inferences derived from obvious pathological and experimental lesions are consequently difficult; while the method of Wallerian degeneration which proved so fruitful in the investigation of the central nervous system and peripheral nerves has here but a limited application. How refreshing it is to read the words of the physiologist, Marshall Hall,[4] who wrote of the "ganglionic nervous system" ninety years ago, at a time when speculation ran rife:

> "Everything . . . is only to be observed by its effects. It is therefore by inducing and observing the pathological effects of a subtraction of the influence of this system that we are led to discoveries in regard to its physiology; and it is therefore under the head of pathology that the subject must be treated of."

Half a century ago nothing was known about the physiological anatomy of the autonomic system, and its purpose as a functioning mechanism was still a closed book. New lines of approach had to be devised to afford information regarding what appeared to be a complicated tangle. Yet, despite the progress that has been made of recent years, it must be admitted that our pathological and clinical knowledge is still in its infancy.

The opener of a discussion upon the autonomic system is indeed confronted with a task of unusual difficulty. A general sketch is, however, called for with which to preface the remarks of subsequent speakers who will deal with individual aspects of the subject. This it will be my purpose to attempt.

The Pioneer Work of the Cambridge Physiologists

The investigations of Gaskell, which were published in 1887–9, and of Langley and his collaborator H. K. Anderson, during the years that followed, have been referred to as one of the brightest stars in the crown of British physiology. It was they who unravelled the scheme of the efferent autonomic system. A reference to their work is apposite, not only because of its paramount importance and historic interest, but since the procedures employed in the great advances for which they were responsible are thereby illustrated.

Gaskell approached the problem from a novel point of view. The presence of small medullated nerve fibres in

the anterior thoracic nerve roots had long been noted. As the result of laborious research he proved that these fibres arise in the intermedio-lateral cell column of the lateral horn of the thoracic and upper lumbar region of the spinal cord, that they leave the anterior nerve roots by way of the white rami communicantes, that they are destined for the supply of the viscera, and that some of the cranial and sacral nerves contain fibres of the same type with a similar distribution. He demonstrated, in fact, that the viscera receive fibres not only from the thoracic region of the spinal cord, but from the brain stem and sacral region, and he argued that the action of these two sets of fibres is antagonistic, the former probably having a katabolic, the latter an anabolic, function.

Langley did much by his numerous degeneration experiments and histological observations, and particularly by his work with nicotine, to further the progress of knowledge. Thus *inter alia* he proved that the small medullated fibres in the anterior thoracic nerve roots (the pre-ganglionic neurones) enter the sympathetic ganglionated chain of the same side, in which they pass either in a cephalic or caudal direction to form connexions with the nerve cells of the chain (the vertebral ganglia) at different levels. Again, he demonstrated that from these nerve cells another series of nerve fibres arise (the post-ganglionic neurones) which are usually non-myelinated, and that they pass to peripherally situated ganglia (the prevertebral ganglia) from which fresh relays of fibres spring, to be distributed to the various viscera. Langley established the general anatomical plan of the efferent autonomic system as we now know it ; he demonstrated that adrenaline has a selective stimulating effect upon the sympathetic system ; and in conjunction with his colleague Anderson he did much to elaborate the details of autonomic innervation. Then, too, it was Langley and Anderson who first described the axon reflexes ; and it was they who definitely proved that the dilatation of the pupil which results from stimulation of the sympathetic is due to the contraction of radially arranged muscle fibres.

Nomenclature

The variety of names which have been applied to the system under consideration must be confusing to the practitioner. Reference is found in the works of the earlier writers to " the organic " and " the ganglionic " nervous system, expressions which are now obsolete. Gaskell spoke of " the visceral system " ; but since these fibres are not restricted to the supply of the viscera this terminology has been abandoned. A similar objection may be taken to the term " vegetative system," which is still sometimes used, especially by American writers. Occasional references to " the involuntary system " are met with in the literature.

A uniform terminology is much to be desired. The nomenclature here employed, which is in very general use, is that of Langley, who suggested the term " autonomic " with which to denote the system as a whole, and the terms " sympathetic " and " parasympathetic " for its thoracic and cranio-sacral subdivisions respectively.

The Clinicians become Interested

But while the physiologists and pharmacologists were stimulated by Gaskell and Langley's investigations, the practical application of their work was not generally recognized by the clinicians—despite the valuable observations of L. R. Müller and others—until many years later. It was, I think, the publications of Eppinger and Hess[5] (1909) upon vagotonia and sympatheticotonia, and of Crile (1915)[6] and Cannon (1915)[7] upon the emotions—the former based largely upon clinical observation, the latter largely upon experimental evidence—which were chiefly responsible for arousing the interest of the clinicians and directing their attention to the autonomic disorders. Langdon Brown's Croonian Lectures,[8] published four years later (1919), did much to familiarize the profession in this country with the work that had been done. Then, in 1924–5, the results of Hunter's suggestive investigations[9] upon the dual innervation of muscle and the question of muscle tone appeared, and these, with Royle's operative experiences, concentrated the attention of the surgeons.

Anatomical Considerations

Reference to certain well-established anatomical facts is desirable, though it is with diffidence that I tread ground which to most of you is so familiar.

Dissection reveals: (*a*) the two *sympathetic chains* which lie one on either side of the ventral aspect of the vertebral column and extend from the atlas to the coccyx (the bead-like swelling on the chain—the vertebral or lateral ganglia—correspond in number to the spinal nerves, except in the cervical region, where there are only three) ; (*b*) the *white rami communicantes* are met with in the thoracic region—they pass from the anterior nerve roots to the vertebral ganglia—and the *grey rami communicantes* which pass from all the vertebral ganglia to the corresponding spinal nerves; and (*c*) *complicated plexuses of nerve fibres*, especially in the neighbourhood of the viscera and outlying ganglia (the prevertebral or collateral ganglia), of which the coeliac, superior and inferior mesenteric, and pelvic are notable examples.

As the result of information derived from various methods of investigation we know that the *efferent peripheral sympathetic* fibres are divisible into three groups according to their distribution—thus: (*a*) The viscera are innervated by fibres (the pre-ganglionic neurones) which arise in the intermedio-lateral cell column of the thoracic region and pass by way of the white rami communicantes to the sympathetic chain of the same side in which they terminate at various levels. A second relay of fibres (the post-ganglionic neurones) spring from the cells of the vertebral ganglia of the sympathetic chain and pass to the outlying prevertebral ganglia, from the cells of which other fibres arise and proceed to their terminations. Small groups of cells, such as the plexuses of Auerbach and Meissner, are met with in the wall of the alimentary tract and are sometimes referred to as terminal ganglia. (*b*) The cutaneous blood vessels and sweat glands, with the exception of those of the head and neck, are innervated by post-ganglionic fibres which arise from *all* the vertebral ganglia and pass by way of the grey rami communicantes to the corresponding spinal nerves, by which they are distributed, without the intervention of intermediary ganglia, to the associated segmental areas on the surface of the body. (*c*) The fibres destined for the supply of the dilator of the pupil, the unstriped muscle of the upper eyelid, the submaxillary gland, and the cutaneous blood vessels and sweat glands of the head and neck, leave the spinal cord by the first and the second thoracic anterior nerve roots; they enter the sympathetic chain (often referred to in this region as the " cervical sympathetic ") in the lower cervical region and pass in the chain to the superior cervical ganglion, from which they proceed to their ultimate destination. Little is known as to the course of the *afferent sympathetic fibres*, and a reference to interesting recent work in this connexion is beyond the scope of this brief sketch. The *efferent peripheral parasympathetic* fibres have, you will recall, three sources of origin—thus: (*a*) The sphincter pupillae and muscle of accommodation are innervated by fibres which arise from cells in the mesencephalon and are carried by way of the ciliary ganglion to their destination. (*b*) The thoracic and abdominal viscera are largely supplied by fibres distributed by the vagus nerve. (*c*) The musculature of the genital organs, bladder, and rectum receives a nerve supply from the sacral region. The further question as to the presence of higher governing autonomic centres in the hypothalamic region of the brain has been the subject of much interesting recent work. It has long been recognized that the cervical sympathetic must have a governing centre in the brain, since pathological lesions in the medulla and cervical region of the

spinal cord may produce the same paralytic phenomena (myosis, ptosis, etc.) which result from interruption of the cervical sympathetic. Further, data derived from various methods of investigation (comparative anatomy, clinical and experimental) point to the existence of a sympathetic governing centre in the hypothalamic grey matter in the floor of the third ventricle, and corroborative evidence has recently been afforded by the demonstration of a tract of nerve fibre which passes from this region to the lateral horn of the spinal cord.[10] There would also appear to be a higher parasympathetic centre in the same neighbourhood. Cushing[11] has brought forward evidence in this connexion, and Beattie[12] has shown experimentally that stimulation of this "centre" produces both gastric peristalsis and secretion. The latter has found—an observation of interest to the clinician—that after prolonged stimulation of this region small areas of hyperaemia may be demonstrated in the gastric mucosa near the lesser curvature. The speakers who follow me will no doubt have something to say regarding recent work on the autonomic centres in the diencephalon and the interesting question of the relation of the hypothalamus to the pituitary.

General Physiological Considerations

The autonomic, in contrast to the voluntary system (which is exclusively concerned with the innervation of the striped or voluntary muscles), supplies the unstriped muscles of the body, the various viscera and glands, the organs of generation, the bladder, the blood vessels, glands, and erectors of the hair, and the muscle of the iris. It is now acknowledged that the arteries of the brain receive a controlling autonomic nerve supply, and of recent years weighty evidence has been advanced which suggests that the skeletal muscles may be directly innervated by sympathetic fibres.

Evidence available from various lines of investigation indicates that the autonomic nervous system, unlike its cerebro-spinal counterpart (which dominates voluntary movement), is exclusively concerned with the involuntary processes associated with the internal economy of the organism. It has to do with nutrition, excretion, and metabolism generally, with propagation, and with the internal mechanism demanded in relation to effort and defence. The sympathetic and parasympathetic systems are antagonistic in their mode of action, the function of the former being essentially katabolic and that of the latter anabolic and restorative. While the parasympathetic is concerned with the normal functioning of the organs it supplies, it exerts at the same time an inhibitory influence over the sympathetic—the chief function of the latter being that of a defence mechanism which is brought into play in states of emergency when any special effort is called for. According to W. B. Cannon[13] the chief function of the sympathetic is to preserve the balance and operate when there is a disturbance in the fluid matrix or internal environment of the organism. Thus during exercise the sympathetic system releases sugar from the reserves, disposes of the extra heat so produced by its action on the vessels of the skin and sweat glands, and by promoting the rapidity of the blood flow and liberating extra corpuscles from the spleen it enables the blood to carry more oxygen from the lungs to the active tissues and more carbon dioxide in the opposite direction. The parasympathetic, on the other hand, builds up the reserves, for it slows the action of the heart and increases the blood supply to the alimentary tract. Thus, while the voluntary or somatic efferent system is concerned with the external environment of the organism, the autonomic system, as Cannon remarks, "collaborates with it in rendering the organism as a whole continuously efficient."

But while the sympathetic system is constituted for widespread effects it may also play a local protective part. The rigidity of the adjacent muscles and the referred pains and areas of cutaneous hyperaesthesia, with which we are so familiar in cases of acute visceral disease, must obviously be determined by reflex activities designed for protective purposes in which the sympathetic is intimately concerned.

The activities of the autonomic system in relation to the endocrine glands raise many interesting problems, to which it is impossible to refer. The thyroid which controls metabolism, the anterior lobe of the pituitary which is concerned with growth, and the suprarenals which are called upon in times of emotional disturbance and when exceptional effort is demanded, would appear to be under the influence of the sympathetic. On the other hand, the parasympathetic would seem to be closely related to the pancreas, the function of which is to store substances which afford the necessary energy for tissue use.

Some most interesting work has recently been carried out by Cannon and his collaborators,[13] who have shown that the entire sympathetic chain from the superior cervical ganglion to the pelvic ganglia may be removed on both sides in cats, dogs, and monkeys, and that the animals survive for indefinite periods in the laboratory and show no abnormality where they are not exposed to cold or undue fatigue. They have also demonstrated that after unilateral removal of the sympathetic in young kittens there is no demonstrable difference in the growth of the kidneys, adrenals, thyroid, or long bones on that side, and that female cats and dogs may give birth to young after complete removal of the sympathetic. Again, it is of interest to note that, as both Sharpey-Schafer and McSwiney have shown,[14] animals may survive in an apparently normal way after section of both vagi.

The Sympathetic System, the Skeletal Muscles, and Muscle Tone

Histological proof that the skeletal muscles are innervated directly by sympathetic fibres, apart from the nerve supply to their blood vessels, is not perhaps conclusive, and the experimental investigations upon which Hunter based his conclusion that the sympathetic nerve supply to skeletal muscles has to do with muscle tone have been severely criticized. I am tempted in passing to mention a clinical point which is, I think, of some interest in this connexion. Is it not a striking fact that there is a dual mechanism, in which both the third nerve and sympathetic take part, which has to do with elevation of the upper eyelid? I speak subject to correction when I say that I know of no parallel instance in the body in which two muscles—one supplied by a cranial nerve and the other by the sympathetic—act in the same direction. Further, is it not the case that the ptosis which occurs as an immediate consequence of division of the cervical sympathetic must be due to loss of tone in the muscle which these nerve fibres supply? May it be then that in the upper lid a special arrangement exists, for some reason which is not obvious, whereby the muscle fibres supplied by the sympathetic and voluntary systems, which in the skeletal muscles are indistinguishable, are here separate and distinct? Objection may be taken to this suggestion on the grounds that there is no convincing proof of the existence of separate unstriped muscle fibres in the upper lid. But if this is so my argument is thereby strengthened, for it must then be admitted that the ptosis which follows sympathetic denervation can only be explained on the assumption that the levator palpebrae, a skeletal muscle, is directly innervated by sympathetic nerve fibres which are concerned with muscle tone.

Influence of Drugs on the Autonomic Nervous System

Langley demonstrated that adrenaline, an extract of the suprarenals, stimulates the whole sympathetic system, and that its action upon any part is the same as the

stimulation of its sympathetic nerves. This is not perhaps surprising when we recall that the suprarenals are unique in that they are innervated directly by pre-ganglionic neurones and that their chromaffin cells are of nervous origin. But is it not a remarkable fact that chance substances, so to speak, should be found which have a more or less specific action? One is almost led to wonder whether the provisions of nature have been so arranged that every pharmacological agent has its specific antidote awaiting discovery.

Drugs act upon the autonomic system in a variety of ways. Thus, while adrenaline stimulates the sympathetic, ergotoxine paralyses its motor fibres. Again, while pilocarpine, physostigmine, and choline stimulate the parasympathetic, atropine paralyses its terminations. But the influence of drugs is more complicated than these general statements would suggest, for their effects are less specific than those of adrenaline, and, as Langley pointed out, organs innervated by the sympathetic may be influenced by substances which stimulate the sympathetic, even after they have been deprived of their nerve supply.

Laboratory investigations upon the selective action of drugs have served to clarify the physiology of the autonomic system, and have provided valuable therapeutic indications. Is it not possible, conversely, that the influence of drugs of known mode of action may throw light upon the aetiology of clinical conditions in which their beneficial effect has been definitely proved? For instance, does the benefit derived from belladonna in cases of Parkinsonism justify any conclusions as to the nature of the rigidity?

Some Clinical Aspects of Sympathetic-Parasympathetic Imbalance

The conception of antagonism between the sympathetic and parasympathetic nerve supply led Eppinger and Hess in 1909 to introduce the terms vagotonic and sympathicotonic with which to designate individuals whose characteristics suggest excitability of the vagus on the one hand or of the sympathetic on the other. Their conclusions were based partly on the observation that atropine does not paralyse the sympathetic in individuals who respond strongly to adrenaline and vice versa, and partly on general clinical considerations. The vagotonic individual is described as reserved, phlegmatic, and "cold-blooded"; he has a slow pulse and a low blood pressure, he sweats readily, has clammy hands, is prone to suffer from spastic constipation and hyperchlorhydria, his sugar tolerance is high, etc. On the other hand, the subject of sympathicotonia is impulsive and excitable, and has a high colour, a fast pulse, a warm skin, etc. Although these clinical pictures are not so clean-cut as Eppinger and Hess depicted them, we can all probably recall individuals who conform to one or other type. One is reminded in this connexion of the "humours" of our forefathers and of the graphic descriptions of the diatheses in my student days. Medicine has of recent years become so scientific in its outlook that less importance is perhaps attached to unexplained clinical entities and impressions than was formerly the case. Some day, perhaps, when we know more of the factors which predispose to disease, the characteristics of the individual may be summed up in terms of endocrine preponderance and vagosympathetic balance. I shall leave the problems of local sympathetic-parasympathetic imbalance to the speakers who are to follow.

Emotional Reactions and the Neuroses

We are all familiar with emotional reactions as they occur in ourselves and others. Darwin's classical descriptions in his *Expression of the Emotions* are no doubt well known to many of you. The manifestations of joy, sorrow, fear, rage, shame, etc., are here vividly depicted, as they are too in the works of Crile and of Cannon. The minor emotional disturbances we witness every day. Why is it that one patient presents a rapid pulse, tremulous hands, a flushed face, and, it may be, beads of perspiration on her forehead, while another is quite unperturbed? This state of "fright" must result from an excitable sympathetic system with its secondary endocrine effects. There are many emotional reactions which influence the normal functioning of the individual organs. Originally no doubt these emotional phenomena constituted part of a protective mechanism, but now they fulfil no useful purpose. Indeed, when they become habitual, as they may do by frequent repetition, they are apt to induce a state of self-consciousness, become a source of annoyance, and lead to introspection.

But what is the nature of emotion? The views of Kempf[15] are here of interest. It is generally admitted that the normal sense of well-being is dependent upon the perfect functioning of the autonomic mechanisms, and that when any one of these is disordered we may be aware of a general sense of uneasiness. According to Kempf the reflex activities of an autonomic segment reach consciousness when they attain a certain intensity and constitute a craving which must be satisfied. Thus hunger is satisfied by food, and an injurious stimulus by "fight or flight." Further, these cravings are associated with feelings of fear or anxiety which, if they are not neutralized, persist and interfere with the efficiency of the personality. But these reflexes may be "conditioned," with the result that a stimulus which was primarily indifferent may call forth the response; consequently the original stimulus may not always be obvious. Kempf also believes that if the individual is only partially successful in dealing with a craving of this kind it is suppressed; but when the *ego* is completely successful in dealing with it, so that it does not come into consciousness, it is repressed. In such circumstances the craving is unable to acquire a neutralizing stimulus and the fear or anxiety persists, and, since the repressed effects are continually trying to force the organism to become conscious of their needs, they cause uneasiness. Thus emotion is, according to Kempf, the result of cravings which, being suppressed or repressed, are unable to release the tension by acquiring neutralizing stimuli.

The part played by the emotions and by anxiety, as also by conscious attention directed to the normal autonomic functions, cannot be over-emphasized. Many disorders of health are so produced. Introspection interferes with the normal functioning of the body, for when an individual's attention is concentrated upon his autonomic mechanisms the normal sympathetic reflexes are disturbed. Here the physician plays a prominent part by correcting misconceptions and anxieties and encouraging the patient to occupy his mind with outside interests.

May Sympathetic Reactions Determine Structural Changes?

We have seen that individuals vary in their sympathetic-parasympathetic "make-up," and that there is good reason for believing that the manifestations of a general or local autonomic reaction may by repetition become habitual. Hence the question arises, and a very important one it is: May these autonomic reactions lead to structural changes in the tissues? That grief and fear may predispose to disease is generally admitted, and we are all familiar with cases in which exophthalmic goitre and other disorders have developed as a direct consequence of an emotional cause. But do emotional reactions determine physical changes? Do the variations in arterial pressure which occur in the "nervous" individual lead to arteriosclerosis? Is the individual who presents sympathicotonic characteristics shorter lived

than his vagotonic brother? Is the peptic ulcer more common in persons of the sympatheticotonic type? Does the excessive use of an organ lead to structural changes in that organ? These are some of the problems which occur to one. The observation of J. Beattie, already referred to, is here of interest. There would appear to be a fruitful field for investigation on these lines.

Morbid Anatomy of the Autonomic System

Apart from the new growths which present distinctive histological features little is known of the morbid anatomy of the autonomic system. A variety of appearances have, it is true, been described in the ganglion cells ; but, as Nissl indicated many years ago, the histological picture presented by a pathological nerve cell is not distinctive of the process which produces it. Nor have attempts to study the morbid anatomy of disorders, the clinical features of which suggest their dependence upon autonomic disease, so far afforded much information. As Hurst[16] points out, achalasia of the oesophagus—some eighteen cases of which have been recorded in which there was inflammation or degeneration of Auerbach's plexus in the cardiac sphincter—is the only malady definitely known to be due to disease of the sympathetic nervous system. But there must be many others so produced. Those distressing cases of thin blue caecum with a paper-like colon, of which I have seen several instances in otherwise healthy and robust young women, must, one is almost forced to believe, have a similar aetiology. Then again, the muscular wasting and trophic skin changes occurring in some cases of arthritis and the localized atrophy of the adjacent muscles of the thorax seen in some cases of phthisis are difficult to account for unless by structural changes in the autonomic nerve supply. Is it not reasonable to suppose that the autonomic system is liable to be affected by the same morbid processes which attack the voluntary nervous system and other tissues? In 1925 I advanced the view that the muscular dystrophies may be due to an abiotrophy of the sympathetic system.[17] Ken Kuré of Tokio[18] has since brought forward additional evidence in support of this suggestion, for he has shown not only that atrophy of muscle may be produced by sympathetic denervation, but that the histological appearances are similar to those met with in the dystrophies. I suggested further that cases of muscular dystrophy (reported in the literature by recognized authorities) in which recovery had occurred might perhaps be explained by a polyneuritis of the sympathetic, with a consequent distribution of the atrophy similar to that observed in the dystrophies.

Concluding Remarks

The purpose of this introductory paper has been to indicate some of the more prominent anatomical features and general functions of the autonomic system. I shall have attained my object if I have succeeded in arousing the interest of those of you who profess no special knowledge in a subject of great clinical importance. From the therapeutic standpoint I have emphasized the fact that sympathetic-parasympathetic imbalance accounts for certain attributes in the "make-up" of the individual, and have indicated certain factors which demand consideration in the province of individual preventive medicine. To the many diseases and disorders which have been attributed on clinical grounds to autonomic disturbance—and they are legion—I have made no reference. Among others I may mention Raynaud's disease, the syndrome of intermittent claudication, thrombo-angiitis obliterans, migraine, angina pectoris, vasovagal attacks, spasmodic asthma, excessive sweating, erythromelalgia, angioneurotic oedema, "trophic" oedemas, scleroderma, unilateral hemiatrophies and hemihypertrophies, lipodystrophy, achalasia of the oesophagus, "congenital" hypertrophy of the pylorus, spastic colon, megalocolon, certain anomalous types of neuralgia, striate rigidity, the hypothalamic syndromes, etc. These are but some of the conditions which at the moment occur to me. Each must have its particular aetiology. What a field for exploration! So long as a disorder is dependent upon functional or recoverable disturbance it comes within the province of the physician, but when it is due to disabling structural changes the possibilities of correction by surgical procedures may have to be considered. The surgeon has already achieved notable successes in the treatment of several of the disorders above referred to (Raynaud's disease, thrombo-angiitis obliterans, congenital megalocolon, etc.), and he will no doubt continue to extend his field of operation. But I would add a final note of warning. The surgical expert, before he interferes—and this applies especially to conditions of sympathetic-parasympathetic imbalance—must be very sure of his diagnostic ground. He must see to it that he attaches due weight to the mental factor in the production of symptoms, and that he is not carried away by his enthusiasm for the niceties of technical procedure.

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RADIOGRAPHIC INVESTIGATION OF LUMBAR AND SCIATIC PAIN*

BY

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(With Special Plate)

No symptom or group of symptoms as those known to the lay public under the terms "lumbago" or "sciatica" may be due to such a diversity of causes. So diverse are the lesions that it is impossible in this discussion, with the short time at our disposal, to cover the whole. The radiographic investigation should always include radiographs of the lumbar and sacral spine, pelvis, and hip-joints, and these should be supplemented by radiographs of other organs or structures according to the indications of the clinician. It is advisable to include lateral radiographs of the lumbar and sacral spine because these may show lesions which would not be suspected from the antero-posterior radiographs. I have recorded the details of a case of aneurysm of the abdominal aorta, the diagnosis of which was made only after a lateral radiograph had been taken. Antero-posterior radiographs of this patient had been made on several occasions because of the persistent

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pain in the back, but the essential lesion had not been suspected or recognized from the antero-posterior radiographs.

By means of radiography it is possible to determine the cause of the symptoms in a large number of cases, and though in many others radiography may only serve to exclude suspected lesions, the help given is unique, and no wise clinician will neglect its possibilities.

The lesion of the skeletal tissues or viscera which gives rise to the symptoms may be due to (*a*) congenital or developmental abnormalities ; (*b*) trauma ; (*c*) toxaemia ; (*d*) acute or chronic inflammatory conditions ; (*e*) tumours.

Congenital or Developmental Abnormalities

These occur in a large percentage of apparently normal individuals. In the bones of the lumbo-sacral region of the spine I found abnormalities present in about 25 per cent. of cases. Other observers have given much higher figures. These abnormalities may be present and the patient have no symptoms, consequently their demonstration should not be interpreted as the cause of the patient's symptoms without very good reasons, after all other possible lesions have been excluded. In some patients these abnormalities are the only lesions found, and operative treatment results in alleviation. Some authorities place more importance upon these abnormalities than others. Thus Willis, who has made a long study of the anatomy of the lower spine, in a recent article, after complaining of the lack of interest of the student in the anatomy of the lumbo-sacral region of the spine, says:

> "This may explain the difficulties of the average physician when confronted with the problem of backache, as well as the tendency of the surgeon to turn his patient over and remove some of the dispensable parts from the abdomen or female pelvis, concerning the anatomy of which his curiosity has been more active."

The abnormalities known as spina bifida occulta, sacralization of the fifth lumbar vertebra, hemivertebrae, and spondylolisthesis are sometimes associated with intractable pain in the lower back, which is only to be relieved by operative measures.

The gynaecologist naturally considers that the majority of cases of low back pain in women are due to retroversion and retroflexion of the uterus, and to such other conditions as chronic cervicitis and prolapse, while less frequently he proves that the pain is due to pressure from large fibroid tumours, incarcerated cysts, salpingitis, and carcinoma. At a recent discussion on backache in women it was suggested by Brooke that in 80 per cent. of the cases the pain was gynaecological in origin and the remaining 20 per cent. orthopaedic. Kark is of the opinion that while these malpositions of the female pelvic organs occur in cases of low back pain, they are merely the accompaniment of structural and postural changes in the back. Unfortunately we are familiar with many other causes, and the importance of a preliminary radiographic examination is illustrated by the details of the following case.

The patient, a woman of 45, had had no fewer than four gynaecological operations on account of low back pain. With a change of medical practitioner necessitated by removal to another district, an *x*-ray examination was advised, and this revealed a collection of stones in one of the ureters, all too large to pass into the bladder. In another patient, whose backache had been attributed to "dropping" of the kidney, the kidney had been fixed without affording any relief from the pain: a large stone was demonstrated on a radiograph in the pelvis of the kidney, and her symptoms disappeared after its removal.

Trauma

The part which trauma plays in lumbar and sciatic pain is difficult to assess. Young men and women frequently sustain severe injuries to the back from which they readily recover and no sign of injury can be detected on a radiograph. Injuries to the back in middle life would appear to be far more significant. The complicated structures and movements of the spine render it difficult without apparatus completely to rest the injured spine. Pain of a severity suggesting fracture may occur without any radiographic evidence of fracture, but subsequent radiographs taken after an interval of one or two years may show partial or complete ossification of the ligaments at the site of the painful vertebrae. Lesser degrees of trauma produce more pain in the "arthritic" spine and the spine showing ossification of the ligaments than in the normal, and the pain is more persistent. Many attacks of "lumbago" appear to originate in sudden involuntary movements of the spine. It is also known that in individuals harbouring a focus of chronic sepsis, progress towards recovery from trauma is much slower than in the healthy individual. That it is difficult to assess the importance of trauma and pain is illustrated by the histories of the following two patients.

The first, a woman, had been thrown from a horse while hunting, and had sustained a fracture of the transverse processes of four lumbar vertebrae, but after a few days resumed her normal life and habits. The second, a man, while pulling on a rope, had fallen backwards because of the breaking of the rope, and sustained a fracture of the transverse process of one lumbar vertebra ; he had not worked since—two years after his accident—and he was seeking compensation for total disablement on account of pain in his back.

Where there is the possibility of a claim for compensation it is essential that a radiograph should be taken as soon as possible after any injury, and the radiograph very carefully examined for evidence of recent bone injury. That it is possible to give some idea of the age of a bone injury from the radiograph, and the importance of this, was illustrated in a case which came before the courts for compensation.

A man had received an injury to his back. He was taken to hospital the following day, when it was seen that he had a bruise over the site of the injury. A radiograph was taken and a fracture of the last dorsal and first lumbar vertebrae was diagnosed. The patient was put into a plaster jacket, kept on his back for some months, and then allowed to get up, wearing first a plaster jacket and later a metal back support. Two years after, his case came before the court on the plea of total disablement owing to pain in the back, but the case was referred for further examination. Radiographs taken one and a half years after the accident were submitted to me for an opinion. These showed fusion of the damaged vertebrae, but the appearance suggested a much older lesion. I asked for the patient to be sent to me for further radiographic examination. These radiographs showed almost identical appearances, and when I obtained, by request, the radiographs taken the day following his injury, I saw that these also showed similar appearances. Further, on inquiring into the nature of the injury, the patient said that he was loading coke and that a piece of coke fell off the railway truck and struck him on the back as he was bending down. Having weighed some of the largest pieces of coke obtainable I found that the heaviest only weighed 1 lb., and I came to the conclusion that such a blow could not possibly have produced so severe an injury. I advised the company to inquire into the man's history, because I was convinced that five to ten years previously he must have had a very severe injury. They were unable to obtain any evidence about this and the case was brought into court.

Before the hearing the man's barrister was given to understand that he had a poor case, and after a long consultation with the patient, he decided to accept a relatively small sum of money as compensation compared with his original claim. After the case had been agreed and settled in court, the man's counsel asked me what evidence I was prepared to give, and when I told him, he said that at the last consultation the man had admitted to him that he had had a fracture of his back seven to eight years before, for which he had received

a large sum of money as compensation. Apparently after receiving this first compensation money, he obtained work with another company, from which he had almost succeeded in obtaining a further large sum for the same injury.

I have previously recorded that radiographs taken immediately after an injury to a vertebral body may show little evidence of deformity, but that after an interval of a week or more, the radiographic appearance of a crushed body may be obtained, and I suggested that when there was a possibility of such an injury the vertebral bodies should be relieved of all pressure and strain by extension.

Radiographs following injury may reveal an unsuspected bone disease such as osteitis deformans (Fig. 1 on Plate).

Toxaemia

Absorption from any focus of chronic sepsis may, by setting up a neuritis, fibrositis, or arthritis, render the patient liable to attacks of lumbar or sciatic pain, and this is probably the most common cause of such symptoms. In a large proportion of these cases radiographs of the lumbar and sacral spine, pelvis, and hip-joints may only show pointing of the articular margins and none of the gross changes usually illustrated as examples of chronic arthritis. On the other hand, patients whose spines show marked lipping of the vertebral bodies, though they may, and usually do, give histories of past attacks of acute lumbago or sciatica, do not appear to suffer attacks of the same severity now that bone changes are well marked. It is these acute conditions which form the majority of the cases, and to which the terms "lumbago" and "sciatica" are usually understood by the lay public to apply, that help in treatment is obtained by radiographic investigation for foci of sepsis.

Men who have paid particular attention to these cases are influenced according to the incidence of the sites of the septic foci and the improvement of the patients after these foci have been eradicated. The colon, gall-bladder, appendix, teeth, sinuses, and genito-urinary sepsis receive varying degrees of attention with different authorities. The fact is that in particular patients relief is obtained by the discovery and eradication of any one or several of these septic foci; but because removal of colon sepsis, septic gall-bladder, septic appendix, septic teeth, or genital sepsis has resulted in relief of symptoms, any one of these should not be allowed to control our judgement in every case. Such obsessions have been responsible in the past for the extraction of many healthy teeth and other operative treatment. Definite lesions which have been demonstrated should receive attention before apparently normal organs or structures are removed; it is advisable to have as complete an investigation as possible before jumping to conclusions as to the cause of the pain. This is illustrated by the history of a patient who showed well-marked evidence of colitis, clinically and radiologically, to which was attributed the cause of lumbago and sciatica, but at a later examination a large fibroid was discovered, which was causing marked pressure on the structures in the pelvis. In another patient the source of the toxin causing severe lumbago and sciatica was attributed to the gall-bladder, and a cholecystectomy was advised; the radiograms, however, showed destruction of the second lumbar vertebra by secondary carcinoma. The primary, a carcinoma of the prostate, was not discovered for six months after the lesion in the spine had been demonstrated on the radiograph.

Severe pains in the back and down the course of the sciatic nerve are not infrequent in diverticulitis. Spriggs and Marxer have pointed out that

"in 100 recent consecutive cases of diverticulosis examined with this point of view, spondylitis was present in 72, whereas in 100 non-diverticulous patients of the same average age as the diverticulous ones—that is, 58 years—spondylitis was present in 20."

These figures suggest that in a fair proportion of cases of lumbar and sciatic pain the toxic absorption from the colon may be responsible. The prevalence of arthritis of the lower spine and hip-joints in women is probably due largely to sepsis of the genito-urinary system.

The value of radiography in investigating the alimentary and urinary tracts and the accessory sinuses in these cases is dealt with in other papers. I shall confine myself here to dental sepsis and its radiographic interpretation in these cases.

Dental Sepsis

No more characteristic lesion is detected by radiography than the abscess or focus of sepsis at the apices of infected teeth, and no more clearly related cases of cause and effect can be seen than in those instances of acute lumbago or sciatica in which the radiologist demonstrates one or more apical abscesses, and in which the painful symptoms disappear after the extraction of the infected teeth, though no response had previously been seen to any form of treatment. Unfortunately septic processes may exist at the apices of teeth from which the patient is absorbing toxins or having his blood supplied with virulent bacteria without the patient being conscious of any local discomfort, or without the teeth showing any evidence of sepsis even to the trained observer. It is most important for the patient, whose health is our first and chief care, that the doctor attending the patient is acquainted with the presence of any such focus of danger to health. The dental surgeon may know of it; he may have knowingly root-filled a septic tooth, believing that it could have no influence on the health of the patient or because he considered it of importance in holding a denture, or because the patient expressed a desire to keep it and the dental surgeon has been persuaded against his better judgement. But when the acute lumbago or sciatica or more grievous malady resulting from it comes along, this evidence is not in the hands of the doctor, and the patient, having no local symptoms, does not think of the teeth as a cause. Further, if the dental surgeon has taken radiographs, the patient and doctor are apt to conclude that these were satisfactory and interpreted correctly, consequently any septic focus has been effectively dealt with. Unfortunately only too often the radiologist discovers that this is not the case. Of the last 1,000 patients submitted to me by doctors searching for a focus of sepsis I found definite evidence of hidden sepsis in no fewer than 682.

The radiograph always shows evidence of chronic septic absorption, and it is often the only evidence of the presence of this type of dental sepsis. Further, I am convinced that if the teeth give the patient no discomfort and present no clinical or radiographic signs of sepsis, they are not the cause of chronic septic absorption and should not be extracted on account of this. Acute dental sepsis will cause the patient to seek treatment because of the local pain; it does not even require skilled training to detect it, but of the apical abscess the patient is generally unconscious and clinical examination will not detect it. It is natural, therefore, that the doctor should refer his patient to a radiologist for an independent opinion as to the possibility of hidden dental sepsis. Most dental surgeons welcome the help which a radiologist can give.

The following remarks made by a surgeon of world-wide repute who has probably seen more radiographs than any surgeon, and recorded in the *British Medical Journal* (April 23rd, 1932), is known to apply to dental radiography with even greater emphasis.

"Radiography was an essential diagnostic agent, and not only should the surgeon insist on procuring a film, but should welcome the radiologist's help in reading it. Some surgeons said

'Give me the film and I can read it for myself,' which was stupid and arrogant, and never to the patient's advantage."

Apart from the fact that the radiologist has far more experience than the practising dental surgeon can possibly obtain, he, unlike the dental surgeon, is a medical man, familiar with the dangers of dental sepsis to the general health, and, perhaps most important, his opinion is unbiased and independent. This opinion of radiography by dental surgeons is most strongly supported by those dental surgeons who have devoted much time to its study.

L. M. Ennis, D.D.S., in his textbook, *Dental Radiography*, says:

"The trouble is that many dentists consider themselves radiologists merely because they possess the apparatus. Putting it straightforwardly, no dentist can qualify as a radiologist merely from sporadic experiments after a desultory course of reading and a superficial line of instruction at the hands of the equipment salesman, and yet there are many dentists who presume to do so. There lies a danger that needs no lengthy explanation. The making of radiographs demands more than the average unthinking dentist will comprehend unless he is thoroughly versed in the requirements of both the technique of making them and the ability to interpret them. Either one of these two realms of radiography can be mastered only after a deep study of the fundamentals that demands time and patience, and the casual operator in the field cannot break into his regular practice to allow sufficient time, or patience for that matter, to become a master."

The importance of the independent opinion is still further emphasized by the fact that dental sepsis or other foci of sepsis may be present, yet may be of little or no importance in causing the grave symptoms exhibited by the patient, and the eradication of these septic foci may subject the patient to unnecessary suffering. The following is an instance. On January 1st, 1932, I was asked to radiograph the teeth of a patient who had been confined to bed for seven weeks with acute sciatica. I took the opportunity also to radiograph the lower spine, pelvis, and hip-joints. The dental radiographs showed two large apical abscesses, to which, had these been the only radiographs taken, might have been attributed the cause of the pain, and the patient subjected to the pain and discomfort of extraction. Unfortunately the radiographs of the lumbar spine, pelvis, and hip-joints showed extensive carcinoma metastases (Fig. 2), though no primary had ever been suspected. This case also emphasizes the importance of radiographing the site of the pain as well as the possible source of toxin. In another patient suffering pains in the back due to erosion of the vertebral bodies by aneurysm, the teeth were extracted because it was thought that these, being septic, were the cause of the pain.

Many instances have occurred in which radiographically normal teeth have been extracted because of lumbar or sciatic pain when unquestionable genital or colonic sepsis had been given secondary consideration or entirely neglected. Only harm can be caused by the removal of any normal structure. This fact is continually brought to the notice of radiologists when investigating cases of gastric disturbance following dental extractions which have failed to relieve the symptoms for which they were extracted. The radiographic appearances of dental sepsis and their significance I have described and illustrated in the *British Medical Journal* (June 16th, 1928).

Acute and Chronic Inflammatory Conditions and Tumours

The radiographic appearances of acute and chronic inflammatory diseases and tumours of the bones of the lumbar and sacral spine, pelvis, and hip-joints and their significance will be dealt with in other papers. I have previously illustrated and described a series of cases in which the radiographs showed definite evidence of such conditions as Paget's disease of the bone (osteitis deformans), secondary malignant deposits in bone, and evidence of syphilis and tubercle which had previously not been suspected as the cause for lumbar or sciatic pain.

Summary

1. In the investigation of the cases of lumbar and sciatic pain, antero-posterior and lateral radiographs of the lumbar and sacral spine, pelvis, and hip-joints should always be made. These may give an immediate clue to the cause of the symptoms.

2. Congenital or developmental irregularities occur in a large percentage of cases, and should not be ascribed as the cause of the symptoms until all other possible lesions have been excluded.

3. In cases of injury to the back or pelvis, radiographs should be taken as soon as possible after the injury, and note made of any old as well as recent injury and the films kept for reference. Changes indicative of injury may be shown on radiographs taken subsequently which were not present on the first radiographs.

4. Acute lumbar and sciatic pain is most frequently associated with toxaemia from some focus of septic absorption such as teeth, colon, genito-urinary system, appendix, gall-bladder, sinuses. Radiographs will often help in the discovery of such a focus.

5. Radiographs of teeth will show evidence of chronic septic absorption though local symptoms and clinical signs may be absent. The essential feature of the radiologist's report on teeth is that it is independent and unbiased.

6. Paget's disease of bone and secondary deposits of malignant disease may be discovered in the preliminary radiographic examination before there is any clinical evidence that such conditions exist.

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THE INFECTIVE ECZEMAS OF THE SCALP*

BY

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The infective eczemas of the scalp are of greater importance than is generally supposed. They are seen in numbers in every large skin clinic, and in some cases present the physician with a task which under the present conditions he is quite unable to accomplish. But before attempting to discuss the rational therapy of these conditions it is essential to divide them into definite aetiological groups.

It is particularly desirable to avoid the common error of grouping them all loosely under the term "seborrhoeic eczema." Though this name is unsatisfactory, even for the disease to which it belongs, it is in fact frequently applied to a number of other conditions which are totally unrelated to seborrhoeic eczema, and especially to the eczemas of the scalp, whatever their cause may be.

It will be agreed that the term "eczema" may, however, be correctly applied to all of them; for eczema is

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a process, a cutaneous reaction of a special type revealing sensitivity or intolerance of the skin to one or several harmful agents ; and whether these be bacteriological, mycotic, or chemical, or of external or internal origin, the process is always the same.

Clinical Features

From the clinical point of view age may be taken as the most satisfactory basis of classification. In earliest infancy the affection of the scalp known usually as the milk crust is almost universal. According to Sabouraud this is due to perpetuation of the epidermic exfoliation which constitutes the vernix caseosa of the foetus, and which mixed with sebum forms the characteristic crust-like covering of the scalp. Whether or not Sabouraud's explanation of this process is correct, the importance of the milk crust lies in the fact that it is sometimes complicated by eczema. Some years ago A. M. H. Gray, in the opening paper of a discussion on infantile eczema, classified primary eczema of the scalp in infancy as an infective condition, though he did not specify the nature of the infection. Some identify it with seborrhoeic eczema, but there is at present no positive evidence that would justify such a conclusion. There are actually no established facts regarding the precise aetiology of primary eczema of the scalp in infancy at present, but the fact that it resembles other varieties of eczema of the scalp known to be of infective origin—for example, in attacking secondarily the post-auricular folds and giving rise sometimes to blepharitis—lends support to Dr. Gray's view.

Epidermic exfoliation may take place in the scalp in infancy in the absence of the characteristic milk crust, and may also be the starting-point of eczema. Kenneth Wills believes that this variety has its origin either in dandruff or in seborrhoeic eczema of the parents or nurse, the infection being conveyed to the child by contagion. Dr. Wills's view, though attractive and simple, lacks confirmation at present ; for, apart from other considerations, it must be admitted that dandruff is almost universal in adults.

In childhood there are two principal clinical varieties of infective eczema of the scalp. The first may begin as a simple streptococcal impetigo of the scalp, though perhaps more often it complicates fissured streptococcal impetigo of the post-auricular folds. In the former case the impetigo becomes converted, often quite suddenly, into acute weeping eczema of the whole scalp ; in the latter, eczematization begins in the post-auricular folds and encroaches upon the scalp by degrees usually, though sometimes quite suddenly. This variety often follows measles, and the actual starting-point of the infection may be an impetiginous rhinitis or blepharitis ; more often than not, in fact, it is accompanied by fissures at the corners of the mouth and at the angles of the nares, and by chronic streptococcal infection of the naso-pharyngeal mucous membranes. The condition is seen more often in hospital than in private practice, and unhealthy surroundings, malnutrition, and neglect are very important predisposing factors.

It is an extremely serious condition, which, when well established, may be extraordinarily difficult or even impossible to eradicate. It may be followed by chronic staphylococcal folliculitis of the scalp, eyebrows, and eyelashes, and it is sometimes complicated by widespread eczema in which the large intertriginous folds suffer most. It is known usually as impetiginous eczema or infective dermatitis, and it is really eczematized impetigo. Sabouraud calls it confluent impetigo.

The prognosis varies ; it may clear up completely, often after spontaneous depilation, or it may persist with remissions into puberty or adult life. Very rarely the chronic cases are followed by partial cicatricial atrophy of the scalp. More often the scalp recovers, while blepharitis persists indefinitely without much change, and appears often to form a focus from which the subject is sensitized to further attacks, of either eczema or pustular folliculitis. In adult males this variety of infective eczema frequently becomes complicated by sycosis of the beard, and occasionally of the hairy parts generally ; when this happens the term "seborrhoeic sycosis" is often erroneously applied to it.

The second variety of infective eczema met with in children is less common and far less serious. Known generally as "fausse teigne amiantacée" of Alibert, it consists of rather densely superimposed lamellae of dead white scales disposed sometimes in circumscribed patches, at others diffusely over the whole or greater part of the scalp. If left undisturbed the mass of scales may be in the form of a dry white crust, which on section is seen to resemble the lamellae in a specimen of asbestos. But if the hair be lifted the superficial scales become detached from the main mass and are found adhering to the hairs. Sabouraud believes fausse teigne to be the result of an extremely mild exudative process not visible to the naked eye, and he states that streptococci can be cultivated from the deepest scales ; fausse teigne may be associated with post-auricular eczema, and it is probably correct to regard it as a very mild eczematous reaction to streptococcal infection. Both impetiginous eczema and fausse teigne occur in adolescence and in adult life, but from puberty onwards the division of the infective eczemas into distinct groups is more difficult than in children owing to the advent of pityriasis simplex or dandruff. This condition, which may be regarded as almost universal, may in certain cases be complicated by seborrhoeic eczema. J. M. H. MacLeod and I have expressed the view, which has been supported by experimental evidence, that seborrhoeic eczema is a simple infection with the spore of Malassez. We regard this organism as a special type of monilia, and consider it the sole cause of seborrhoeic eczema in its typical forms.

It is necessary to exercise some care before making the diagnosis of seborrhoeic eczema. It is found most commonly on the frontal portion of the scalp, where it encroaches on the forehead, on the temples, and about the ears ; but sometimes it extends diffusely or in patches of figured outline throughout the scalp. It is dry, covered by scales which feel greasy to touch, and is usually associated with, or preceded by, well-marked dandruff. It is often accompanied by figured seborrhoeic eczema of the chest and interscapular region or by one of the other typical varieties of seborrhoeic eczema. As long as the condition remains typical the diagnosis is simple, but as the result of scratching, of secondary pyogenic infection, or of external irritation of any kind, it may become a diffuse, dry, weeping, or crusted eczema, objectively identical with eczema of the scalp of any origin, and especially difficult to distinguish from microbic or impetiginous eczema.

What means have we, then, of differentiating in a difficult case between microbic eczema of the scalp and seborrhoeic eczema? It is usually a question principally of clinical judgement, and in this the past history of the patient may be valuable. The history of primary fissures in the post-auricular folds of impetigo of the scalp, of previous attacks in childhood of eczema of the ears and scalp, or the presence of chronic blepharitis dating from childhood points to the diagnosis of microbic eczema ; while the presence of seborrhoeic eczema on parts other than the scalp may be taken as presumptive evidence of primary seborrhoeic eczema.

Treatment

Time will not permit of more than a very brief survey of the treatment of these conditions. The infective variety of infantile eczema of the scalp responds usually to the application of the crude tar paste devised by C. J. White. The original formula of this preparation was: prepared crude coal tar 2 parts, zinc oxide 2 parts, to be thoroughly rubbed together and incorporated with starch 16 parts, soft paraffin 16 parts. It is necessary, as in other varieties of infantile eczema, to splint the arms to prevent scratching. The prognosis is generally better than in the allergic type of infantile eczema, but it is necessary to bear in mind that the allergic predisposition may be present in this as well as in the facial type. The fausse teigne of childhood generally responds quite satisfactorily to the application of an ointment containing oil of cade, sulphur, and salicylic acid—for example, oil of cade 40 minims, sulphur 20 grains, salicylic acid 10 grains, soft paraffin 2 drachms, coco-nut oil to 1 ounce. Post-auricular streptococcal fissures are best treated by the application of silver nitrate, 1/2 to 2 per cent. in distilled water or spirits of nitrous ether, or of 1 to 2 per cent. protargol or argyrol. From the point of view of treatment impetiginous eczema is by far the most important of the conditions which have been reviewed. The early acute stage must be treated by simple applications, such as calamine liniment or lead lotion. The hair, of course, should be cut very short. The weeping and crusted stage is in due course followed by a dry, desquamative phase, and then ointments containing tar and sulphur may be applied ; but the most satisfactory local treatment in very chronic cases is the application of very small fractional doses of *x* rays. But in impetiginous eczema general treatment is of far greater importance than local remedies. The patient is suffering from extreme intolerance to a pyogenic infection, and it is necessary to do everything possible to restore his resistance. The most valuable remedy that we have is natural sunlight.

A boy aged 7 developed fissured impetigo and eczema of the post-auricular folds, thought to be due to wearing a pair of ill-fitting glasses ; later the eczema spread into the scalp, then to the axillae and inguino-crural folds, and eventually involved the greater part of the surface. For a year he received at different hands treatment of all kinds, including several ultra-violet light baths, but made no progress towards recovery. He was then admitted to hospital as an in-patient, and was given an epilating dose of thallium acetate ; with the fall of the hair the scalp recovered and the remainder of the eczema almost cleared up, but when the hair re-grew the eczema reappeared. Eventually I came to the conclusion that in all probability the condition would never clear up in hospital.

On my advice the parents went to live at the seaside, and during the summer allowed the boy to sun-bathe for the greater part of each day. He was a pigmenter, recovered completely, survived the following winter, and when I heard of him a few days ago after three years there had been no relapse.

This is the ideal treatment, but unfortunately it cannot be followed by the majority of patients, who may be doomed to suffer from a very serious and disabling disease for the remainder of their lives. No doubt the same treatment might be applied with advantage to the adult cases of impetiginous eczema, so often miscalled seborrhoeic eczema. In both adults and children artificial light therapy, whether the carbon arc or mercury vapour lamp be used, is ineffective.

Finally, I would like to lay stress upon the importance of chronic impetiginous eczema from the public health aspect. Unless cured in childhood the condition may not only cause great suffering and misery, but may disable the subject of it from earning a living. In adult males, especially, the common sequel, sycosis barbae, is of particularly serious significance. Apart from the question of housing, which is of course of first importance as a prophylactic measure, the cases require in childhood as much care as is bestowed by the public health authorities on cases of lupus.

CHRONIC APPENDICITIS IN SHANGHAI

BY

H. R. FRIEDLANDER, M.R.C.S., L.R.C.P.

WITH A NOTE ON X-RAY EXAMINATION BY
J. E. BOWEN

(With Special Plate)

Does such a condition as chronic appendicitis exist, and is it possible that it may exist in one part of the world and not in another?

Certain English surgeons have stated that there is no such thing as chronic appendicitis. I presume that they are referring to cases confined to the British Isles. Speaking with the experience of twelve years of surgery and general practice in Shanghai, I would make the statement that such cases most emphatically do exist—in Shanghai.

Shanghai is a place where amoebic and bacillary dysentery are rife—*ascaris* is common and ova of *Trichuris trichiura* are very frequently found in stool examination. The climate is moderate in spring and autumn and cold in winter. In summer there is extreme humidity, and it is hot and very enervating. Vegetable gardens are for the most part manured with human excreta ; dysentery, possibly on that account, is very common, whilst there are always cases of the enteric group, and cholera always appears in the summer. It is therefore extremely risky to eat vegetables that have not been boiled, and lettuce grown under foreign supervision, where only chemical manure is allowed, assuredly produces many cases of dysentery or allied complaints, as, in spite of supervision, polluted water is undoubtedly used by the native gardeners. During the summer months one sees many cases of diarrhoea of obscure origin. Repeated examinations of the stools fail to demonstrate the presence of the dysenteries, and some of these cases continue throughout the summer to a varying degree of severity in spite of most thorough and varied treatments.

Are the dysenteries, summer diarrhoeas, infections with *ascaris, Trichuris trichiura,* etc., the cause or the precursors of the frequent cases of chronic appendicitis in Shanghai?

Many patients with chronic appendicitis seek advice in the first place simply because they do not feel well, and frequently remark, "I think I am run down and probably need a tonic." There can frequently be obtained a previous history of dysentery or diarrhoea, but in many cases the dysentery was very mild and the diarrhoea of short duration, and they are simply forgotten.

Tiredness, disinclination to go out after getting home, and a great desire to lie down and remain in an easy chair on finishing the day's work are very common complaints in these cases. Patients often complain of a feeling of nausea—rarely any vomiting—which has no relation to the taking of food. Physical examination of the patient may reveal nothing, but in many instances one can detect slightly increased resistance to deep palpation over the right lower abdomen, and frequently palpation over the right iliac fossa produces a slight feeling of epigastric discomfort and sometimes a feeling of nausea. This discomfort is sometimes referred to the umbilicus, but is more frequently epigastric.

Children—I have had cases as young as three years—suddenly complain of having a "sore tummy." They usually want to lie down and remain quiet. When seen they sometimes still complain of a "sore tummy," but frequently nothing is revealed by palpation, and within, may be, half an hour, they are up and playing about again. Occasionally a child complains of pain, umbilical in region, and vomits, after which everything is apparently normal and the child seems to be in perfect health. There is rarely any fever, and the attacks are usually of very short duration, but are always repeated at varying intervals, sometimes as much as three or four months elapsing between two attacks.

In patients with complaints such as the above, *x*-ray examination of the gastro-intestinal tract is of the greatest value, and in obscure cases where clinical signs are absent or vague, and where the possibility of chronic appendicitis exists, *x*-ray examination should be insisted upon. A suspected case with any one of these clinical symptoms, giving an *x*-ray picture of a caecal residue alone at forty-eight hours, should be regarded with the greatest suspicion. A picture showing caecal delay, the beginning of an irregularly filling appendix at twenty-four hours, a caecal residue at forty-eight, and a few irregular spots of barium in the appendix should be taken as definitely pathological, and operation should be advised. Frequently the appendix does not show at all, and in these cases—where there are any clinical signs, a twenty-four-hour caecal delay, and a forty-eight-hour caecal residue, operation should be advised, as it is usually found (1) that the appendix is retrocaecal and obscured by the caecal residue, or (2) that the appendix is stenosed.

Illustrative Cases

To show the value of *x*-ray examination in the more obscure cases the following short notes are given. Skiagrams will be found on the Special Plate.

Case 1.—H., a man aged 39, complained of general malaise and a great desire to lie down or remain in a big chair after coming home from the office. He had no particular complaint apart from this, and explained that he just felt "under the weather." He had had a mild attack of influenza two or three weeks previously, but did not lie up, and his condition at the time was regarded as a case of post-influenzal debility. On examination the only point noted was abdominal discomfort on deep palpation over the left lower abdomen. Pressure over the right iliac fossa produced no discomfort. The condition did not improve, so an *x*-ray examination of the gastro-intestinal tract was made which revealed at twenty-four hours the proximal portion of the appendix irregularly filled, and a shadow, apparently a piece of lead shot, which at the time was queried as being the tip of the appendix. The forty-eight-hour picture shows a definite appendix residue, and depicts a long irregularly filled appendix with a bulbous tip in which the lead shot is situated. Operation produced a long appendix bound down to the caecum at the base and a small shot in its tip. Recovery was straightforward, and with it all previous symptoms disappeared.

Case 2.—T., a rather fat, flabby man, aged 32, gave a two-years' history of vague epigastric discomfort and a marked feeling of fullness after meals. Medical and dietetic treatments had been tried with only temporary and partial relief. *X*-ray examination revealed definite forty-eight-hour residue in the appendix, which was partially stenosed. Operation produced a kinked and firmly bound down appendix with the distal half free. Owing to the adhesions it was difficult to remove, and was done "base foremost." Three days after operation the patient was taking and enjoying light food; he stated that this was the first time for many months that he had taken any food without discomfort.

Case 3.—L. was a sturdy boy, aged 7, who had had no illness other than measles. During the last twelve months he had complained at irregular intervals of what he described as "tummy ache," and had always wanted to lie down on these occasions. At times he had had slight fevers and had sometimes vomited. The last two vomiting attacks occurred whilst motoring, and were very sudden and projectile. They never lasted more than an hour or two, and afterwards he was to all appearances perfectly well and never complained of pain on abdominal palpation. *X* rays showed at twenty-four hours a very faint shadow which was taken as outlining a stenosed appendix, with, at forty-eight hours, a small residue at the tip of the appendix. [The twenty-four-hour shadow was too faint to show in the print, so it is not included.] Operation produced an unusually long appendix with a small haemorrhage into it and a concretion at the tip.

Case 4.—C., a girl aged 6, gave a two-years' history of periodic attacks of vague abdominal discomfort accompanied by occasional vomiting. The pain was never definitely localized, and was invariably of short duration. Appetite was always very poor, and the child complained of "feeling full" after the smallest meal and frequently retched whilst consuming it. *X*-ray examination showed at forty-eight hours slight residue in the caecum and ascending colon, through which the appendix could be seen retrocaecally. Operation produced a retrocaecal appendix, kinked at two-thirds from its base and bound down to the caecum. Since operation three years ago the child has never vomited, and has put on weight regularly. There has been no discomfort after food and her appetite has been excellent.

Case 5.—K., a big, well-made man, aged 24, consulted me because two days previously he had suddenly felt very faint after playing seven consecutive chukkers of polo. After taking some brandy he felt tired, but otherwise quite well, and only came to see me because he had had a fright. Physical examination revealed no abnormality in the chest and no abdominal discomfort was complained of. On deep palpation over the right iliac fossa the patient complained of slight discomfort in the epigastric region and a feeling of nausea. *X*-ray examination showed a twenty-four-hour caecal delay, and an irregularly filled appendix. The forty-eight-hour film revealed caecal and appendix residue with some small concretions showing in the appendix. Operation produced an appendix twisted by adhesions and containing several concretions.

I am greatly indebted to Dr. J. E. Bowen, superintendent and radiologist of the County Hospital, Shanghai, for the *x*-ray pictures, for their interpretation, and for his permission to publish them.

ROUTINE *X*-RAY EXAMINATION OF CASES SUSPECTED OF CHRONIC APPENDIX

The meal used is the liquid one devised by Dr. Gilbert Scott and is taken fasting, no aperient being given the previous day. The patient is seen swallowing the meal, and at six, twenty-four, and forty-eight hours afterwards. In cases of marked stasis further examinations are made, with or without an aperient according to the case.

The points to which attention is directed are the following:

1. In these cases there is frequently spasm of the pylorus, which appears to be exceptionally common in children.

2. The appendix should fill. Should it not be visible at the hours stated above, a second meal is given and examinations made at intermediate hours. Should it not be seen after these two examinations, it is considered pathological.

3. When the appendix is visualized, its size, shape, and the presence of concretions or adhesions are noted.

4. Pain on pressure over the appendix, as seen on the screen, is of especial importance.

5. The appendix should empty with the caecum. A definite appendix residue is held to be pathological. A definite delay in the caecum, where the appendix has not been seen in forty-eight hours, is regarded as highly suspicious, as in many of these cases after the caecum has emptied a faint shadow can be seen remaining, which operation has proved to be due to a stenosed adherent appendix.

AN UNUSUAL CASE OF MENINGITIS ASSOCIATED WITH HAEMATURIA

BY

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(With Special Plate)

Cases of acute haemorrhagic nephritis associated with meningococcal meningitis are uncommon. In the majority of cases they are associated with purpura, and are, as a rule, severe and often fatal. Arvid Wallgren (*Acta Med. Scand.*, 1920) has recorded three cases in which oedema and haematuria preceded the meningitic symptoms, and in which the diagnosis of uraemia was first made and the meningococcal infection proved by examination of the cerebro-spinal fluid. These cases were fatal.

In the following case the meningeal symptoms were atypical, and were at first masked by those of nephritis. The causal organism was not found, but in my opinion it was probably a subacute meningococcal infection.

Case Record

Harold A., aged 3 years, was admitted to Selly Oak Hospital on October 24th, 1931. He had been taken ill three weeks previously with acute tonsillitis followed by cervical adenitis. On October 23rd he vomited, and was feverish and delirious. He had been healthy, except for measles in February, 1930. There was no history of otitis media.

On admission he was a normally developed fairly well-nourished child. He was pale, there was oedema of the face and eyelids, and herpes on the left side of his mouth. The tonsils were inflamed, and the upper cervical glands enlarged. Nothing abnormal was found in the heart, lungs, or abdomen. The central nervous system appeared normal. The temperature was 100°, pulse 120, respirations 30. On examination of the urine it was found to contain a large quantity of blood and albumin. The specific gravity was 1020, and there were many granular casts, but no organisms were found or grown in the urine. Streptococci and staphylococci were grown from a throat swab. The child seemed to be suffering from acute nephritis following tonsillitis.

During the following week he ran a high temperature, varying from 103° to 100°. He passed a fair quantity of urine, which, as he was often incontinent, could not be measured, and this, for the first four days, contained a large quantity of blood. Later, red blood corpuscles and casts were seen microscopically, and there was some albumin for ten to fourteen days. The oedema of face subsided in three or four days.

On November 2nd the child appeared worse. He lay curled up in bed, was very irritable, and resented any interference or handling. The limbs were held flexed and appeared to be stiff, but reflexes were normal; the neck muscles were slightly rigid, though there was no head retraction. The temperature was 99°, pulse 130. The specific gravity of the urine was 1018, and it contained a faint trace of albumin. The ear drums were examined and found normal. The blood urea was 20 mg. per cent. A lumbar puncture revealed cerebro-spinal fluid under slightly increased pressure, and contaminated with blood. It was sterile, but there seemed to be an increase of white cells. During the next few days the temperature was 98° to 100°, and symptoms of cerebral irritation subsided, though he occasionally vomited, and appeared to be losing weight, his limbs becoming wasted. The temperature remained normal. There seemed to be slight improvement until November 21st, when he had a rise to 102°, and vomited.

On December 1st he again had a rise of temperature, and complained of pain in the neck and head. The urine was clear, only occasionally showing a trace of albumin. The tonsils were a little injected. There was slight neck rigidity. Kernig's sign was absent, knee-jerks and ankle-jerks were normal, but there was an extensor plantar reflex on both sides. Ophthalmoscopic examination showed some swelling of both disks. A lumbar puncture was done; the cerebro-spinal fluid was under increased pressure, and was turbid. It contained: 2,000 cells per c.mm., mainly polymorphs; 0.30 per cent. protein; and 678.2 mg. per cent. chlorides. No organisms were seen and the culture was sterile. The Wassermann reaction, both in the cerebro-spinal fluid and in the blood, was negative.

For five days the child was irritable, vomited, and complained of headache, these symptoms being relieved by lumbar puncture. On December 6th the temperature was normal and his general condition improved. For the next ten days he appeared happy and contented, and played with his toys, and on December 17th he again had a rise of temperature, with headache, vomiting, and irritability. Frequent lumbar punctures were done during the attacks and between attacks, and the cerebro-spinal fluid was always turbid, the cells varying from 2,000 to 3,000 per c.mm. On every occasion it was sterile. These recurrent attacks continued at intervals of ten to fourteen days, there being usually a rise of temperature to 100° or 101°. The child complained of frontal headaches, vomited, and was extremely irritable. Symptoms were relieved by withdrawing 10 to 15 c.cm. of cerebro-spinal fluid. The recurrent attacks of headache and vomiting were thought to be due to intermittent blocking of the foramina of Luschka and Magendie, giving rise to internal hydrocephalus, and it was decided to do an encephalography in order to ascertain the extent of the hydrocephalus and also because similar cases were said to have benefited by the introduction of air into the meningeal spaces.

On February 8th, 1932, a lumbar puncture was done; 10 c.cm. of cerebro-spinal fluid were withdrawn and 9 c.cm. of air injected. This was continued until 60 c.cm. of air had been injected. The child then complained of some headache, so the injection of air was discontinued and an *x*-ray photograph was taken. In this the air was seen to have filled the lateral ventricles, the aqueduct of Sylvius, and the third and the fourth ventricles. There was definite internal hydrocephalus. The cerebro-spinal fluid was again examined, and contained over 2,000 cells per c.mm., mainly polymorphs; 0.4 per cent. protein; 17 mg. per cent. glucose; and 636.9 mg. per cent. chlorides. No organisms were seen, and cultures were negative. The child vomited twice after the radiograph had been taken, and was lethargic that day. Next day he was cheerful and bright, and took his food well. The general condition improved during the next fortnight, and he put on weight for the first time since admission.

After this he had no recurrence of the cerebral attacks. The cerebro-spinal fluid examined early in March was normal: cells, 2.6 per c.mm.; protein, 0.01 per cent. On March 15th he had gained over 4 lb. in weight, was walking well, and showed a normal mentality. He was discharged home on March 26th. At this time his cranial nerves and optic disks were normal, abdominal reflexes brisk, knee-jerks and ankle-jerks normal, and there was an extensor plantar reflex of both feet. I have seen the child twice since, and he has maintained his satisfactory progress. On the right side there is still an extensor plantar response.

Commentary

The points of interest in this case are:

1. The onset. The child was acutely ill, and the case resembled that of an acute haemorrhagic nephritis—probably a manifestation of meningococcal septicaemia.

2. The prolonged course and the late manifestations of meningeal symptoms. Nine days after admission the child appeared to have cerebral irritation lasting twenty-four to thirty-six hours; thirty days after admission he had neck rigidity and an extensor plantar response.

3. The rapid improvement after encephalography. This was probably due to breaking down of adhesions, or releasing of an encysted area, after which the chronic inflammatory process, shown by increased cells and protein in the cerebro-spinal fluid, ceased.

The points in favour of this being a meningococcal infection are:

1. The herpes at the onset, which occurs in a considerable number of cases (Rolleston: ***Acute Infectious Fevers***).

2. The large numbers of polymorphs in the cerebro-spinal fluid, and the fact that in subacute cases meningococci may be very scarce.

3. Cases of meningococcal infection with an onset resembling nephritis have been described.

4. A prolonged course with relapses is one recognized form of meningococcal septicaemia.

CONGENITAL ABSENCE OF HEAD OF FEMUR

BY

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(With Special Plate)

The following cases of this anomaly seem of sufficient interest to warrant record. Briefly, they are examples of congenital absence of the head of the femur on both sides in two members of the same family, with a condition resembling double Perthes's disease in a third member. The particulars are as follows:

Case Record

M. M. W., a female child of 5 years, was sent to me on March 12th, 1931. She complained of slight pain in the left hip, and the mother stated that she was limping. On clinical examination nothing definite could be made out. There was certainly no sign of limping when the child was made to walk, and her general condition was good. There was no muscular wasting, and movements of the joint were practically normal. There was no tenderness anywhere, and no pain on percussion of the heel or of the great trochanter. The patient was *x*-rayed, and an extraordinary condition was seen. The head of the femur on both sides was completely absent, and a space of about 1 inch existed between the neck and the acetabulum (Fig. 1). A report was sent to the tuberculosis officer concerned, giving particulars of what was found, and stating that the condition was not tuberculous, and that she should be recommended to an orthopaedic hospital for any treatment required.

At a later date Dr. Folliott (the tuberculosis officer who had sent the case) reported that he had reason to believe that two other members of the same family were affected by some hip condition, and they were requested to attend for examination. On January 8th, 1932, the first patient's mother and brother attended for examination. Neither of them complained of any symptoms whatsoever. The mother displayed rather a "waddling" gait, and her appearance was somewhat suggestive of a congenital specific condition. On *x*-ray examination of the mother, aged 44, it was found that the head of the femur on both sides was absent, and both the necks were considerably thickened (Fig. 2).

The boy, aged 7, showed nothing abnormal on clinical examination, but the *x* rays revealed a condition resembling double Perthes's disease (Fig. 3).

Commentary and Review of Literature

In the *Annals of Surgery*, 1930, this condition is reported on by Dr. Franklin E. Walton of St. Louis. He describes congenital absence of the neck of the femur as a comparatively rare anomaly and gives the history as one of a painless, sinking limp, first noticeable when the child begins to walk, suggestive of the likelihood of congenital dislocation of the hip. He further states that the usual confirmatory clinical features are—shortening of the limb, displacement of the upper trochanter, absence of the head from its normal position (below the centre of the inguinal ligament), and mild limitation of abduction, with the other movements comparatively free. None of these symptoms or signs were present in any of the cases recorded above. Walton states that the cases on record are few, but he refers to eleven. Of these six were bilateral cases (two of which later developed coxa vara), two unilateral (one of which showed absence of the upper epiphysis and part of the shaft), one showing absence of the lower femoral epiphysis, and one extensive arrest of development of the femur.

Treves, in his *Surgical Anatomy*, states that there are three epiphyses in the upper end of the femur, one for the head, which unites at between 18 and 19 years; one for the lesser trochanter, which unites at about 17; and one for the great trochanter, which unites at about 18. The neck is formed by extension of ossification from the shaft and grows as a part of the shaft. Slovitch, in a thesis for the doctorate of medicine of the University of Paris, wrote on these conditions. He stated that these malformations were unknown until forty years ago, the first observation of them being published in 1883 by John H. Morgan. In this case there was congenital absence of the right femur. Some authors, however, doubt the occurrence of total congenital absence. Slovitch refers to the work of Reiner, who has divided these malformations into five groups. In the first are placed all the cases in which the femur is shortened and thinned—in these there is an extreme degree of congenital coxa vara. In the second the femur does not exist as a complete unit, but is divided into several fragments—below, the inferior extremity of the femoral shaft with its epiphyses; above, the head and the trochanter. In the third group the same disposition exists as in the second, but the lower extremity of the femoral shaft is fixed like a cork on to the tibia, without the formation of a knee-joint. In the fourth group certain parts of the femur form a complete unit, but the upper part of the femoral shaft is arrested in its development and retains its embryo form. The head is situated in the prolongation of the shaft of the femur; the neck does not exist. Above, the axis of the femur is bent towards the pelvis. In the last group the malformation consists of extreme shortening of the shaft. The epiphysis, hip-joints, and knee-joints are normally developed and present their normal dimensions. It is pointed out by this author that there is one characteristic found in common—namely, that the proximal part of the femur is that which shows the greatest malformation.

Blencke, who has adopted Reiner's classification, has examined sixty-three cases, adding three new ones of his own—total sixty-six. Of these, thirty were males and nineteen females; in the remaining seventeen the sex was not stated. From this he assumed that the malformation was commoner in males than in females, but this point is not yet certain. Eleven times the deformity affected the femur alone; twelve times the femur and the fibula; eleven times the femur, the fibula, and the patella; and three times the femur, the foot, and the fibula. In twelve cases the deformity affected all the bones of the lower extremity without exception, and thirty-one times the femur, fibula, patella, and the foot. Detailed observations are wanting on nine of the cases. In the great majority the patella was absent. Naturally, the extent of the deformity differed in these cases. In some, absence of the femur was complete, these being very rare, and denied by some authors. In others the fragments, more or less large, were present as vestiges, and sometimes the malformation consisted in a true shortening of the hypoplasia, the shape being preserved. These statistics show that the deformity can be either unilateral or bilateral, and can exist alone or in association with other deformities of the lower limbs, having a predilection for certain of them—in particular for certain parts of the same bone—but not absolutely sparing any part of the lower extremity.

In discussing the pathology of this condition various authors have suggested alcoholism of the parents, emotion,

infections, and injuries. Other less likely causes have been quoted as being capable of producing the deformity, some of these being associated with pre-natal obstetrical abnormalities. According to Reiner, it is logical that any external cause, whether pathological or mechanical, which localizes its action on a special vascular area of the femur in the embryo, can only interfere with the development of the particular vessel interfered with. Slovitch, in his thesis, comments on the fact that the congenital absence of the head of the femur was also associated with the absence of the fibula, and absence of several toes in one case.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

CHRONIC DUODENAL ILEUS

(With Special Plate)

I wish to report the following case, which came under my care recently, first, because the condition is a rare one; secondly, because of the excellent radiographs taken by Dr. J. Fielding, which made a confident pre-operative diagnosis possible; and finally, because operative treatment in this condition is so successful.

CASE RECORD

The patient was a female, aged 24, on whom I had operated for acute appendicitis three years previously. She stated that the present complaint had persisted for nine months. She first noticed a sensation of fullness and pain in the epigastric region, coming on a short time after meals. Then she began to vomit. This usually occurred from half to one hour after meals. Food was returned unaltered, but was usually bile-stained. The vomiting became gradually more frequent, she lost weight, and was very constipated.

On admission to hospital she was very emaciated, weighing 6 st. 2 lb. Her general condition was very poor. Cardiac, respiratory, renal, and nervous systems were normal. I was not able to make a provisional diagnosis from the clinical history. She was kept in bed for a week and put on a milk diet. The vomiting diminished. She was then *x*-rayed, the report being as follows:

"Stomach normal in size, tone, and mobility. No evidence of ulceration. Duodenal cap filled, but no evidence of deformity. Early on during the screen examination a lag was noticed in the third portion of the duodenum. As the passage of the meal progressed, the third and fourth portions of the duodenum were observed to be very much dilated, and little or no peristalsis was evident. The *x*-ray evidence is of chronic duodenal ileus."

Assisted by Dr. Fennell I explored the abdomen by a right paramedian incision. There was no ulcer of the stomach or duodenum to be seen, or any evidence of gall-bladder disease. On drawing out the transverse colon and turning it upwards the third part of the duodenum, as seen through the transverse mesocolon, was dilated. This dilatation terminated abruptly where the duodenum was crossed by the superior mesenteric vessels. The vessels were tightly stretched across the intestine at this point, greatly diminishing the lumen. I decided to perform a duodeno-jejunostomy as recommended by Moynihan. On incising the mesocolon over the selected portion of the duodenum, and on mobilizing the latter, I noticed that the coats of the intestine were much thickened. For the anastomosis I used a loop of jejunum close to the flexure. Owing to the dilatation of the duodenum the operation was comparatively simple.

Convalescence was smooth and she has not vomited since (over two months), and is gaining weight steadily.

North Infirmary, Cork. D. F. HEGARTY, F.R.C.S.Ed.

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TWO UNUSUAL TONGUE CASES

(With Special Plate)

Case 1: Metal Ring Round Tongue.—This case is of interest in view of its duration and the slight inconvenience which the foreign body caused.

A little girl 6 years old came to the surgical out-patient department of this hospital complaining of a sore throat and a lump under her tongue. Her mother thought that she had enlarged tonsils. On examination a hard mass was found under the tongue, the surface of which was covered with tartar. Closer examination revealed it to be a metal ring, which, when followed round the base of the tongue, completely surrounded it. The posterior part could be felt with the finger in the pharynx. When questioned the child said that a little friend of hers had put the metal frame of the front of a watch round her tougue about one year before. Under general anaesthesia the ring was removed after dividing it in one place.

The *x*-ray photograph reproduced on the plate shows the ring *in situ*.

Case 2: Bilateral Congenital Tumours of the Tongue.—As congenital tumours of the tongue are rare, the publication of a short note on this case seems justifiable.

A female child 9 days old was admitted to the hospital with two swellings in its mouth which had been noticed by the maternity nurse. On examination these were seen to be two pedunculated tumours arising from the dorsum of the tongue on each side, just in front of the junction of its anterior two-thirds and posterior third. The one on the right side was the larger, being about the size of a gooseberry, and accommodated itself in a cleft in the soft palate; the left one was a little smaller. The surface of the tumours had the same appearance as the mucous membrane of the tongue. The lower gum presented a serrated appearance due to segmentation of the labiogingival lamina, a condition sometimes seen in the newborn. The tumours were ligatured and removed. On microscopical examination they presented the characteristics of accessory salivary glands.

I have to thank Mr. Ian Fraser for the permission to publish these cases.

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OSSIFICATION OF BOTH ACHILLES TENDONS WITH TRAUMATIC FRACTURE OF ONE

(With Special Plate)

The condition below described appears to be unique—at any rate in the extent of involvement of the tendons in the bony formation and in the results of injury.

The patient, a man 56 years of age, was born with a deformity of both feet which, so far as can be ascertained, was a certain degree of bilateral talipes equinus. At the age of 8, owing to a severe walking disability, he had had the operation of tenotomy performed. Both tendons were divided by the subcutaneous method. The result was a great improvement in his gait, though the patient had always been described as an "awkward walker." On reaching adult life he took up a vocation which necessitated a great deal of walking, but one which he has followed up to the present. About a year ago he began to experience aching pains in both heels particularly and in the feet generally. His ankles used also to swell slightly. These symptoms greatly increased in March and April, 1932, and made the carrying out of his work very painful and difficult. The left foot was especially affected. On May 2nd, whilst walking, he suddenly felt a sensation as of a heavy blow on his left heel, followed by a "fiery pain" up the back of his leg. After this he was just able to crawl home, very slowly and painfully.

The patient was first seen the next day. Examination revealed a tall man, thin, under-nourished, and of rather poor physique. Heart, lungs, and other systems were normal, but indigestion was complained of, and there was some dental caries. The patient had been living on a diet consisting

chiefly of apples and bought sandwiches. The left foot was greatly swollen and exquisitely tender—particularly round the heel and up the calf of the leg. A considerable amount of bruising was present. *X* rays revealed extensive ossification of both Achilles tendons, with a complete bony fracture of the left, showing a considerable gap.

A few days later, when time had been given for the swelling to subside, operation was performed under a general anaesthetic. An incision, three inches in length, was made in the mid-line over the posterior surface of the tendo Achillis. The ossified fragments were exposed and defined, and holes drilled through them. The fractured ends were brought into apposition and wired with silver wire. Further holes were drilled, and kangaroo tendon sutures inserted for reinforcement. The leg was then immobilized on a back-splint, with a foot-piece at right angles. At the end of three weeks passive movements and massage were instituted, followed by active movements in due course. Finally, walking was gradually and carefully commenced. In about eight weeks from the date of operation the patient was allowed to proceed on a convalescent holiday, with three-quarters of an inch raising of the heels of his boots.

It will be noted (see Plate) that the bony rod is complete in itself and not connected with, or growing up from, the os calcis. This is also true of the right tendo Achillis. The question of the causation is interesting. The most likely theory seems to be that of a very chronic infection introduced at the original operation of tenotomy. There is also the possibility that the condition might be due to excessive strain upon tendons that had been subjected to artificial alteration and correction of function, coupled with the effect of a source of infection in the patient's carious teeth—since removed in the routine clearance of sources of infection. Finally, as a pure speculation, one wonders if the extraordinary diet taken by the patient over many years could aid in the production of abnormal tissue by reason of metabolic error or vitamin deficiency.

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SPONTANEOUS EXTRUSION OF BOTH TONSILS

It seems worth while to record the following case of follicular tonsillitis because of the rather striking and unusual termination, and with the object of hearing from others of similar experiences.

The patient, a girl of 18, was first seen two days after the onset of a sore throat. She looked very ill, and had a temperature of 102°, which rose, later in the evening, to 104°. The pulse was very rapid. The tonsils and pillars of the fauces were extremely red, swollen, and oedematous. That night she was delirious, and required sedatives. The severe constitutional disturbance continued next morning, and spots of pus were seen dotted all over both tonsils. On the third day the patient looked very toxic, was unable to make any effort whatever, had great difficulty in speaking, and showed albuminuria. A film of pus covered both tonsils, which, in the course of examination, felt peculiarly loose in their beds. The condition remained unchanged for two days, but on the sixth day of her illness she felt and looked much better. She stated that during the night she had vomited, or coughed up, lumps of material, with little or no haemorrhage. On inspection these masses were found to be two in number, and to resemble tonsils. That such was the case was obvious when the throat was examined, for the tonsillar fossae were empty and lined by a thin, grey slough, just as though surgical removal had been undertaken. Thereafter convalescence was rapid and uninterrupted, except for the opening and draining of a large perianal abscess—a recurrence of an old trouble—which she then confessed "had been gathering" all the time she was ill.

Treatment had included the administration of six 2 c.cm. doses of S.U.P. 36 during the first three days, combined with frequent swabbing of the throat with pure glycerin. No bacteriological investigation was made. When the tonsils were sectioned it was possible to identify the surfaces by the crypts. Microscopical examination revealed more or less necrotic lymphoid tissue, with clumps of unidentified organisms on the surface and in the substance of the tonsils.

Murton, co. Durham. Alfred Amdor, M.B., Ch.B.

Reports of Societies

BLACKWATER FEVER

A meeting of the Royal Society of Tropical Medicine and Hygiene was held at Manson House on October 20th, with the President, Dr. Carmichael Low, in the chair. Members of the society were asked to stand for a few moments in memory of Sir Ronald Ross, one of their most illustrious past-presidents.

Dr. G. Giglioli opened the discussion on blackwater fever with a paper on its epidemiological and aetiological aspects in British Guiana. He regarded blackwater fever as being the direct result of infection with special haemolytic strains of Plasmodium, more especially of *P. falciparum*, even though such strains could not at present be morphologically differentiated from the ordinary parasites. The epidemiology was governed by the geographical and local distribution and incidence of these haemolytic strains, and by the degree of immunity of the population. Immunity to blackwater presented the same characteristics as immunity to malaria. It might be racial, as in negroes, or acquired. The latter was shown by the relative immunity of the adult section of a settled, racially non-immune population in an endemic area, as well as by the clinical course of the disease in children. In children infected with haemolytic strains the onset of haemoglobinuria might be determined by: (1) special virulence of the strain; (2) absence of immunity or impairment of general non-specific resistance; (3) contingent factors tending to break down the existing racial or acquired immunity; and (4) quinine.

Dr. P. Manson-Barr reviewed the clinical aspects of blackwater fever as observed in twenty cases coming under his observation in London. In five the disease had manifested itself while the patients were in bed under treatment for subtertian malaria. Eight patients had died, so the mortality rate was high compared with those observed in the Dependencies, where it approximated to 25 per cent. Most of the patients came from West Africa. The administration of quinine appeared to be definitely connected with the onset, and in some cases there did appear to be a definitely recognizable pre-blackwater state, though this was not borne out by the laboratory findings. Subtertian parasites were found in eleven instances. The condition had invariably developed within the first six months of residence in England. With regard to treatment, he reaffirmed his belief in the value of sodium bicarbonate intravenously with glucose, combined with blood transfusion.

Dr. Hamilton Fairley and Mr. R. J. Bromfield dealt with blackwater fever from a laboratory aspect. They considered, first, the intracellular disposal of blood pigment which is called into play in the haemolytic anaemia of malaria, and the renal mechanism for dealing with blood lysed in the circulation; and secondly, the phenomena associated with intravascular haemolysis, such as occur after an incompatible blood transfusion. These included initial pyrexia, haemoglobinaemia, haemoglobinuria, haemolytic jaundice, oliguria, anuria, and uraemia: at necropsy, haemosiderosis of the tissues, degeneration of epithelium in the secreting tubules, and blockage of the collecting tubules of the kidney were characteristic. Sometimes necrosis of liver cells was also noted. All these features were exactly what were found in blackwater fever, which might be described as an acute haemolysis or series of haemolyses occurring on a background of

subtertian malaria. The cause of the haemolysis, however, remained the enigma. The speakers briefly reviewed the chemical changes in the blood, including those of urea, bilirubin, cholesterol, chloride, and carbon dioxide. Blood urea and van den Bergh estimations were of special value in prognosis. No laboratory evidence of a pre-blackwater state had been forthcoming. An investigation was being made on the value of blood transfusion during the haemolytic phase ; to date five cases had been studied. The question of whether compatible donor's corpuscles were haemolysed in these circumstances was important, both from a practical and an academic aspect. To supply additional information serial blood counts, haemocrit estimations, and determinations of the bilirubin and haemoglobin content of the plasma, and the secretory rate of oxyhaemoglobin in the urine, were being made at short intervals of time. Clinical material for such a study was, however, scanty in London, and a final answer to this question had not yet been obtained. Dr. Fairley and Mr. Bromfield then demonstrated macroscopical and microscopical specimens illustrating the pigment deposits and the pathological findings in pernicious malaria, blackwater fever, and post-transfusion haemoglobinuria. Dr. W. FLETCHER showed slides of sections of the liver illustrating central necrosis of the hepatic lobule, which was a fairly constant change in his cases in Malaya.

Sir SAMUEL CHRISTOPHERS discussed blackwater fever from the viewpoint of special haemolytic strains. As part of his hypothesis Dr. Giglioli held that there were regions where malaria was endemic and severe, but where blackwater fever did not exist, citing as examples the Roman Campagna and the Punjab. He could not speak from personal experience of Italy, but the Punjab was not a highly endemic area, the spleen rate being only about 5 per cent. The time factor after infection was a feature in blackwater. Generally it was two years and usually not less than three months, though in one exceptional case it appeared to have been only six weeks. The facts regarding duration of residence were not compatible with the haemolytic strain theory. As to haemoglobinuria in monkey malaria, this appeared to be a straightforward parasitic effect, whereas in blackwater there appeared to be some change produced in the body by the Plasmodium.

Professor WARRINGTON YORKE expressed his disappointment that strictly quantitative estimations of oxyhaemoglobin had not been undertaken in the laboratory investigations. In blackwater fever there was an enormous haemolysis but only a trifling degree of haemoglobinuria, whereas in infections like piroplasmosis the haemoglobinaemia was considerable and directly proportional to the number of parasites present. As he had formerly suggested, the haemolysis might be occurring in the spleen or certain other organs rich in reticulum, and possibly the reason for the small amount of haemoglobinaemia was the proliferation of epithelium resulting from the antecedent malaria. Discussing treatment, Professor Yorke cited figures in the recent excellent monograph by Ross to show that there had been no improvement in therapy during the past twenty years. Plenty of fluid was the essential basis of treatment, and there was no evidence to support the view that intravenous alkalis or blood transfusion were advisable ; indeed, the facts indicated that these procedures were dangerous in some cases.

Dr. J. W. MCNEE said that in blackwater fever they were not concerned with the activity of the reticulo-endothelial system, but rather with the speed at which changes occurred. The methaemoglobinaemia was odd, while the lesions in the kidney and liver had surprised him by their small extent ; they could be explained by emboli of material concerned in haemolysis. The disappearance of malarial pigment from blackwater fever spleens was striking. Professor Warrington Yorke held that only 10 per cent. of the haemoglobin in haemolysis might occur in the urine, but on the basis of personal experience he could not believe this. Haemoglobinuria depended essentially, not on the amount of haemoglobin in the circulating blood, but on the speed at which haemolysis was occurring.

ACUTE APPENDICITIS

At a meeting of the Liverpool Medical Institution held on October 27th, with the president, Professor R. E. KELLY, in the chair,

Mr. PHILIP HAWE, in a paper on acute appendicitis, said that the recognition of the two types of acute disease of the appendix—appendicular obstruction and true inflammatory appendicitis, with occasional mixed forms—was accepted as satisfactory from both the pathological and the clinical points of view. The rapidity of the disease in a large proportion of cases, mostly obstructive but some purely inflammatory, was shown by the fact that in seventy cases of less than twenty-four hours' duration operation revealed gangrene or threatened rupture in no fewer than thirty-six, and in ten further cases a local or diffuse peritonitis was already established. An accurate history of the pain was of prime importance in early diagnosis, and only second to this was the appearance of local tenderness. Temperature, pulse, vomiting, rigidity, and hyperaesthesia—all these were subject to much variation, and any or all were absent in several cases at any stage of the disease. Mr. Hawe, discussing the clinical features of the disease in children, referred to appendicitis as a cause of acidosis. The necessity for early diagnosis was illustrated by the fact that out of ten deaths in 250 cases, nine were in cases of diffuse or local peritonitis ; only one death occurred in the 103 cases in which the disease was still confined to the appendix. The usual view that the mortality is very high in young children was probably incorrect. In a consideration of post-operative complications Mr. Hawe made special reference to ileus. He emphasized the importance of recognizing that in the majority of these cases not responding to general measures a mechanical obstruction existed. The value of early post-operative enterostomy or prophylactic enterostomy, even at the time of the original operation, was shown from the cases reviewed.

Mr. FRANK JEANS said he thought that the appendix was nearly always present after an abscess had been merely opened ; it should be removed later, the best time being as soon as the abscess had healed. As a differential point of diagnosis between a perforated appendix and a perforated duodenum, the duodenal cases hardly ever vomited, the appendicular ones nearly always. Mr. W. A. THOMPSON said that umbilical pain followed by vomiting should be diagnosed as appendicitis until it was shown that some other condition was present: it was then also appendicitis. In young children under 3½ years of age, sudden abdominal pain suprapubic in origin, with severe constitutional disturbances, might be streptococcal peritonitis, while in older children, and particularly in girls between the ages of 5 and 7, the condition might be pneumococcal peritonitis. Mr. C. A. WELLS said he believed that in cases which required drainage a suprapubic stab and a tube in the pelvis diminished the incidence of pelvic abscesses requiring further treatment. In late cases, with a palpable localized mass, whether hard or manifestly containing some pus, immediate operation should be withheld. Observation in hospital or nursing home, with the patient in the Fowler position and on restricted fluids, would usually result in resolution, and a clean operation could be undertaken after a period of three months or more. Dr. J. M. LEGGATE pointed out that in the current *British Journal of Surgery* statistics were given of a large series of cases of acute appendicitis which showed a much lower mortality with Battle's than with the gridiron incision.

The meeting of the Liverpool Society of Anaesthetists, held at the David Lewis Northern Hospital on October 25th, took the form of a demonstration in blind nasal intubation anaesthesia, by Dr. I. W. Magill (Westminster Hospital). After the demonstration a short discussion took place, and Dr. Magill was questioned about his technique. As an expression of thanks to Dr. I. W. Magill, Mr. G. C. E. Simpson, and Mr. J. H. Rawlinson for arranging the demonstration they were elected to honorary membership of the society.

Reviews

ACROMEGALY

Dr. F. R. B. Atkinson's book on *Acromegaly*[1] embodies the results of a study of that disease extending over a period of twenty years. Dr. Atkinson has collected particulars from the records of more than thirteen hundred cases, and has made a note of every fact relating to the disease. The vast collection of details thus accumulated is systematically arranged and classified in his monograph. In the first place, the phenomena of the disease are considered; every possible change that has been observed in the anatomical systems of the body is registered and minutely described, and there follows an equally detailed description of the changes which may be met with in the functional systems. This exposition of the phenomena of the disease is followed by analytical tables of the individual cases recorded in the literature. The three tables provide respectively analyses of 265 post-mortem examinations, of the conditions specially met with in the eyes in 914 cases, and of the general features of the disease in the whole series of 1,319 cases. Separate chapters are devoted to the history, the aetiology, the pathogeny, and the treatment; and a complete bibliography terminates the volume. As will be seen from this brief description, the monograph is a work of reference which will supply information on any question relating to the disease, within the limits of present knowledge.

A foreword contributed by Sir Arthur Keith is of particular interest as containing what appears to be a new explanation of the nature of acromegaly. It is a generally accepted view that pathological processes are properly regarded as modified physiological processes, and in the case of acromegaly the enlargement of the organs and tissues which occurs has been attributed to a disordered process of growth. It is clear, however, that the term "growth," as ordinarily understood, is hardly applicable in this case, and Sir Arthur makes the apt suggestion that the enlargements in acromegaly correspond more nearly to the process of hypertrophy. This process is well exemplified in prolonged exertion, when not only the muscles directly concerned become enlarged, but the bones strengthen and thicken, and other systems, such as the respiratory and circulatory systems, become modified and adapted to the altered conditions. Apparently the whole body is affected, and the mechanism concerned is probably regulated through the pituitary gland. On this view acromegaly is a disorder of the process of hypertrophy.

ESSENTIALS OF MEDICINE

In the preface to his new textbook, entitled *Medicine*,[2] Dr. G. E. Beaumont throws down, in effect, three challenges to the reviewer. In the first place, he raises the question whether in this age of specialism it is possible for one physician to write single-handed on general medicine. Next, he indicates that the book is primarily intended for the student and practitioner, which means that it must include essentials and omit extraneous matter. Thirdly, he writes that "no effort has been spared to bring every article up to date."

On the first challenge it must be said at once that Dr. Beaumont has admirably succeeded. Within the compass of little over seven hundred pages, well printed, profusely illustrated, and with an excellent index, he has produced a valuable and complete textbook, marred only by an irritating use of numerals when words would be better, as in the phrase "there are 2 types." The sections on the central nervous system and on the specific fevers are admirable, and present throughout the point of view of the general physician. Treatment is stressed from beginning to end, and the diets for such conditions as gastric ulcer, diabetes, and nephritis are set out in excellent detail. On the question of the suitability of the book for the student and practitioner there is also little to criticize. The very complex classification of jaundice, after Rich, is, however, out of place in a work of this kind, and something simpler should be substituted. It would also be better not to use "empyema" and "pyothorax" as synonymous terms, when all recent work has served to emphasize the localized nature of the pus in empyema with the difference this makes in treatment. Infantile scurvy should be included as an important cause of gingivitis.

On the third challenge Dr. Beaumont has succeeded in establishing his claims, with four or five exceptions. In congenital pyloric stenosis lavage with sodium bicarbonate is being abandoned because of the danger of alkalosis; Raynaud's disease is not due to raising of the "basic" blood pressure, whatever that may mean; Gaucher's splenomegaly is no longer regarded as an endothelioma of the spleen; the organism in rheumatic fever, according to modern work, is probably the haemolytic streptococcus rather than the *viridans* variety; and the urinary test for pregnancy depends on the anterior pituitary hormone and not on an oestrin, as correctly indicated in the latest edition of Dr. Beaumont's own textbook on *Recent Advances in Medicine*. These are all minor points, and are mentioned here because the book will certainly appear in future editions, where they can be rectified. The finding of such blemishes also indicates that the book is easy to read, for in a large work of this nature it is not usual for the reviewer to do more than sample the contents. Here the easy style and convenient arrangement make for agreeable reading, and the popularity of such a volume can be assured. It is a relief not to find typhoid fever on page 1, but relegated to a position which its present incidence warrants. The price of the book is also a thorough recommendation, and among textbooks of to-day there can scarcely be a better guinea's worth. The author is to be congratulated on his excellent achievement.

RECTAL NARCOSIS

Since its discovery by Willstätter and Duisberg about eight years ago avertin (tribromethylalcohol) has, first, been the subject of a full and careful clinical investigation by a few well-chosen observers in both Germany and England. It was then placed on the market, and for two years has had an extensive trial at the hands of numerous anaesthetists. This is therefore an opportune moment for the publication of *An Introduction to "Avertin" Rectal Anaesthesia*,[3] by J. Kempson Maddox, which gives a fairly comprehensive survey of our knowledge concerning avertin at the present moment. The history and physiology of rectal narcosis in general are dealt with, and a chapter is devoted to the chemistry and pharmacology of this particular drug. The author carefully marshals the arguments for and against the use of rectal narcosis in preference to other forms of anaesthesia, and discusses the advantages of avertin and the type of case for which it is most suitable. We do not altogether agree with him when he states that avertin is unsuitable for cases

[1] *Acromegaly*. By F. R. B. Atkinson, M.B., C.M.Ed. With a foreword by Sir Arthur Keith. London: John Bale, Sons and Danielsson, Ltd. 1932. (Pp. viii + 260. 21s. net.)

[2] *Medicine. Essentials for Practitioners and Students*. By G. E. Beaumont M.A., D.M.Oxon., F.R.C.P., D.P.H.Lond. London: J. and A. Churchill. 1932. (Pp. xvi + 719; 61 figures. 21s.)

[3] *An Introduction to "Avertin" Rectal Anaesthesia*. By J. Kempson Maddox, M.D., Ch.M., M.R.C.P. With a foreword by Harold R. Dew, M.B., F.R.C.S., F.R.A.C.S. Sydney, Australia: Angus and Robertson, Ltd. (Pp. viii + 124; illustrated. 9s.)

of operation on the rectum. In a two-stage perineal excision of the rectum, for example, avertin can easily be administered through the proximal end of the preliminary colostomy.

The technique of administering avertin to a patient is described in detail. Preparation and premedication are dealt with, as well as the treatment of any complications that may arise. In discussing the use of avertin in the specialties the author stresses its value in parturition as well as in surgery of the thyroid and in the pre-operative treatment of children. Mention is also made of its use in convulsive states, and for the control of spasms in tetanus. A final chapter deals with deaths that have been reported following the administration of avertin, and its present position in the armamentarium of the anaesthetist is discussed. A later edition might with advantage contain a short chapter on the use of avertin in veterinary surgery, where it has already proved itself an extremely valuable agent in anaesthetizing cats. This volume should be of interest both to those who are experienced in the administration of avertin and to those who contemplate its use for the first time.

PREVENTION OF INDUSTRIAL ACCIDENTS

In *The Causes of Accidents*[4] Mr. ERIC FARMER has given a very lucid exposition of the results of recent research into a problem towards the solution of which he himself has made notable contributions. The book begins with a survey of such general factors in accident causation as fatigue, speed of production, bad lighting, extremes of temperature, youth and inexperience, and general physical unfitness. It is found that accidents are more frequent (although less severe) among the young than among the elderly; and the conclusion is suggested that special schemes of supervision and training, similar to those attempted in the mining industry, are desirable for juvenile workers, until they acquire proper control over their immature muscles.

Having considered the factors which affect all members of a group alike, the author goes on to discuss those which affect individual members of a group differently. Individual differences in accident incidence are studied in the light of three hypotheses—namely, that of "simple chance distribution," that of "biased distribution" (according to which one accident modifies the worker's liability to others), and that of "distribution of unequal liabilities." It is found that the third theory, which postulates that some persons are inherently more prone to accidents than others under equal conditions of exposure to risk, whether or not they have sustained any previous accidents, is the one which best fits the facts, although chance and biased liability may both play a part. This conclusion is shown to be of great practical importance in prevention; for if accident distribution is mainly affected by a few individuals with a special predisposition, these persons, if it is possible to detect them, can be refused admittance to dangerous occupations. The results of recent attempts to diagnose accident proneness by means of tests are next summarized. Certain tests of sensorimotor co-ordination have proved distinctly promising, the accident rate of the worst 25 per cent. of subjects in the tests being approximately twice as great as that of the remaining 75 per cent.

The book concludes with a strong plea for the practical application in industry of the results of scientific investigation. While admitting that much research remains to be carried out, the author insists that partial knowledge is better than ignorance, and that it behoves those responsible for industrial organization to give practical effect to the discoveries already made. The first essential is the keeping of adequate records; and a detailed description is given of a simple plan of recording accidents in such a way as to make possible an analysis of their causes. Mr. Farmer's admirable summary is intended primarily for the plain man, but no better introduction to the subject can be imagined for the interested physician, who will find in the bibliography adequate references to more technical studies.

[4] *The Causes of Accidents.* By Eric Farmer, M.A. Three Lectures on Recent Research into the Causes of Accidents, given at the Royal Society of Arts under the Heath Clark Bequest to the National Institute of Industrial Psychology. London: Sir Isaac Pitman and Sons, Ltd. 1932. (Pp. 88. 3s. 6d. net.)

HUMAN ANATOMY

Twenty-six anatomists, under the editorial guidance of Professor A. NICOLAS, have set to work to produce the fourth edition of that monumental record of French erudition, the well-known textbook of human anatomy of POIRIER and CHARPY.[5] The whole treatise comprises five volumes, to be issued in fourteen parts, and will make a complete record of all that appertains to the origin, form, variations, anomalies, and malformations of the human body. The first part of the first volume, which has now appeared, is concerned mainly with the anatomy of the cranial skeleton. It opens with a brief note on the position of anatomy amongst the biological sciences, and it is urged that anatomy is no mere accessory science, but a fundamental part of the investigation of living things. That the study of structure does occupy such a position will be readily admitted, but the further qualification that anatomy is static as opposed to physiology, which is dynamic, does not command our agreement. Growth and differentiation are the major problems of the anatomist of to-day, and these things are not static. The work next proceeds to discuss the morphology of the cell, the general anatomy of the tissues, and the development of bone. This last is dealt with in a manner altogether too brief, and, indeed, the space given to this very important subject is not commensurate with the scope that is allowed to the descriptive parts. The book swells enormously as the authors set out to describe the origin and development of the skull and the individual skull bones. One hundred and fifty pages are allotted to the anatomy, variations, and anomalies of the occipital bone alone. The volume concludes with a discussion of the skull as a whole—its growth, the age and sex differences, variations, malformations, craniometry, and cognate matters. It is furnished with a good bibliography and an adequate index. There are 393 illustrations, the majority being reproduced from line drawings.

On the whole the treatment of anatomy as indicated in the present volume is somewhat traditional and conservative. The book is a vast compendium of information, largely descriptive. Embryology and comparative anatomy are, of course, used to explain the form of the body, but there is little evidence of the more experimental attitude which has become so manifest in both American and British anatomy.

[5] *Traité d'Anatomie Humaine.* Par P. Poirier et A. Charpy. Quatrième édition, entièrement refondue sous la direction de A. Nicolas. Paris: Masson et Cie. 1931. (Pp. 667; 393 figures. 130 fr.)

THE HARLEY STREET AREA

Dr. C. P. BRYAN has written an interesting and chatty little book[6] about Harley Street and its neighbourhood which should be read by all whose business or pleasure calls them to frequent what is otherwise a series of dull streets. The map in the cover of the book shows that the area he deals with is bounded on the north by Mary-

[6] *Roundabout Harley Street. The Story of Some Famous Streets.* By Cyril Phillips Bryan, M.B., B.Ch. London: John Bale, Sons and Danielsson, Ltd. 1932. (Pp. xii + 260. 5s. net.)

lebone Road, south by Oxford Street, east by Portland Place, and west by Marylebone High Street—a district so rich in history that it was hardly necessary for him to have strayed beyond it to Tyburn, with its gruesome memories. The names of the streets themselves recall the names of the owners of the land: Harley Street and Wimpole Street, Portland Place and Cavendish Square, even Oxford Street itself, which was called after Robert Vere, the second Earl of Oxford and Mortimer, and not because it was the road to Oxford. The suggestion is plausible, for the street used to be Tyburn Road, and its continuation is the Uxbridge Road. The story begins with John Holles in 1710, who married Margaret, daughter of Henry Cavendish, Duke of Newcastle. The dukedom became extinct, and Holles begged the title for himself. When he died, without a son, the estate passed to his daughter, who married Edward Harley, Earl of Oxford, of Wigmore Cottage, Herefordshire, and owner of the Wimpole estate in Cambridgeshire. A few years later the Marylebone Gardens made the district well known to pleasure-seeking Londoners—gardens which are now occupied by Beaumont Street and parts of Devonshire Street and Devonshire Place. The road between Oxford Street and the gardens was lonely enough to require a guard of soldiers as a convoy for visitors going home. The gardens themselves were not free from danger and temptation in the "dark walks," as is known to all readers of Fanny Burney, for it was there that Evelina was rescued by Lord Orville from very undesirable company.

Strange events happened in the district. Strangest of all, perhaps, was on that Sunday evening in October, 1896, when Sun Yat Sen was kidnapped into the Chinese Legation at 49, Portland Place—an event so incredible to the official mind that Sir James Cantlie, his friend, was flouted by the police, by the Foreign Office, and by the Prime Minister, whom he sought in succession and entreated to take action. It was only when the *Globe* newspaper was induced to publish an account that the young medical student was rescued and afterwards became the first President of the Chinese Republic. The district has had numerous inhabitants of note, many of whom are duly recorded by Dr. Bryan. Soldiers like Wellington and Roberts, politicians like Pitt and Gladstone, painters like Turner and Allan Ramsay, hosts of physicians and surgeons, Florence Nightingale and Lady Hamilton. It is well to be reminded of them. Dr. Bryan asks to be told of errors which he can correct in those future editions which will surely be called for. Here are a few. The majority of those who made their last journey to Tyburn went in carts; he implies that they were drawn on hurdles. Abraham Chovet (p. 48) lectured at Barber Surgeons' Hall in Monkwell Street, and not at Surgeons' Hall in the Old Bailey. Cameons (p. 106) should be Camoens. Mr. Clive (p. 121) is surely Henry Cline, the greatly respected surgeon of St. Thomas's Hospital. Sir A. Pearce Gould (p. 173) was not a baronet.

Notes on Books

Dr. Robert Hutchison has now revised his very popular book *The Elements of Medical Treatment*[7] for a second edition. Dr. Hutchison's well-known skill at putting things with crystal clearness is well illustrated in this book, and anyone who reads it, student or practitioner, cannot fail to acquire useful knowledge. The section on anaemia has been rewritten in view of recent discoveries, and sections have been added on sedatives, anthelmintics, and physiotherapy. This last is especially welcome, and in a dozen pages Dr. Hutchison has succeeded in condensing a whole volume of advice on choice of methods and their application. Students of the present generation are lucky in having such a book available, and the second edition will assuredly be a best-seller, like its predecessor.

Dr. Ivor Tuckett has brought out another edition of his little book, *The Evidence for the Supernatural*,[8] first published in 1911. The book is written from "the point of view of the man in the street." The credulous who are willing to believe in anything so long as it is fantastic enough will do well to read the first two chapters—on "What is truth?" and "The value of evidence." The fact that many eminent men have expressed their belief in so-called supernatural phenomena is often considered proof of their reality. Dr. Tuckett's documented criticism of mediumistic utterances and materializations will probably not convince the "faithful," but may be of help to those who still waver. We note that he does not accept completely the evidence in favour of telepathy. Most people seem to agree that telepathy does occur: the interesting problem is, How does it occur?

The fifty-seventh volume of Notable British Trials is concerned with what has been called the Arran murder.[9] This crime, which was committed in 1889, had few features of medical interest and, although the defence raised the question of an accidental fall *versus* homicidal violence, there was really very little doubt possible. It was all the more astounding, therefore, that after conviction and sentence the clemency of the Crown was invoked, and J. W. Lawrie was respited and his sentence commuted to imprisonment for life. This sentence was literally carried out, for except for a few hours' interlude of escape from prison he spent the remaining forty-one years of his existence in Scottish prisons, dying in Perth Penitentiary in 1930. Mr. Roughead, who edits this volume, reprints as an appendix a pamphlet by Dr. Campbell Black, in which he fiercely attacked the medical witnesses, including Dr. (afterwards Sir) Henry Littlejohn, and adversely criticized their evidence.

The *Transactions of the Tuberculosis Society of Scotland, 1930–31*,[10] contain papers read at meetings and clinical reports rendered. Among the subjects dealt with are: cardiac displacements in pulmonary tuberculosis, the tuberculosis death rate in Glasgow, treatment of bone and joint infections, types of the disease in children, pregnancy in tuberculosis, and bovine infection in man.

[7] *The Elements of Medical Treatment.* By Robert Hutchison, M.D., F.R.C.P. Second edition. Bristol: John Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1932. (Pp. 188. 5s. net.)

[8] *The Evidence for the Supernatural.* A Critical Study made with "Uncommon Sense." By Ivor LL. Tuckett, M.A., M.D. The Thinker's Library, No. 27. London: Watts and Co. (Pp. xiv + 146. 1s. net.)

[9] *Trial of John Watson Lawrie (The Arran Murder).* Notable British Trials. Edited by William Roughead. Edinburgh and London: W. Hodge and Co. Ltd. 1932. (Pp. 285; illustrated. 10s. 6d. net.)

[10] *Transactions of the Tuberculosis Society of Scotland, 1930–31.* Edinburgh: Oliver and Boyd. 1932. (Pp. 88; illustrated.)

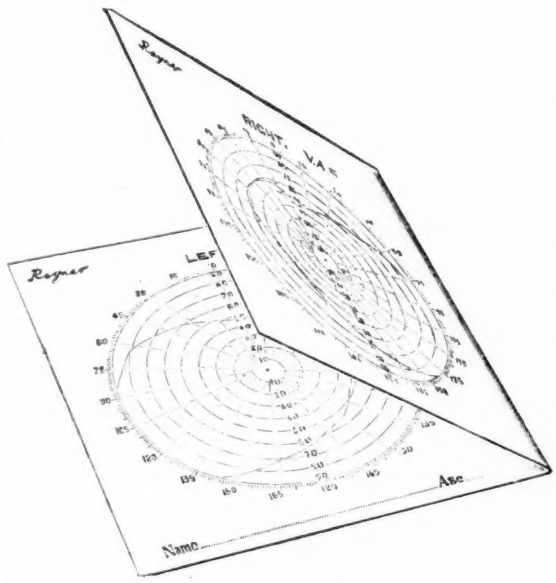
Preparations and Appliances

PERIMETER CHARTS

Mr. Stenhouse Stewart (Hull) writes: One of the most effective means of comparing the perimetric fields of an eye upon any two occasions is to superimpose the charts obtained upon the same instrument under similar lighting conditions on the two dates. If they are held up towards a bright source of light the differences between them become apparent upon inspection. This has been well known to users of perimeters for some time, and the majority of instrument makers take care to leave their perimeter charts quite clear of printed matter on the reverse side in order to facilitate this test.

It may be desired upon occasion to compare the opposite parts of the fields of the right and left eyes, both nasal fields, or both temporal fields. In my opinion this is not a very fruitful source of information, and my principal object in mentioning it is to point out that the modification I am proposing for perimeter charts happens to make such a comparison more difficult. I do not regard this as serious, as congruity of a heteronymous defect, if it ever occurs, is of little diagnostic value. Homonymous field defect, however, indicates a lesion situated somewhere between the optic chiasma and the occipital cortex. If the field defect is not

congruous, it enables the surgeon to decide that the position of a suspected lesion lies between the chiasma and the basal ganglia—that is, in the relatively short course of the optic tracts. If the defect is congruous, and the two fields are a perfect fit in the defective area, the lesion can be placed with certainty in the neighbourhood of the optic radiations of one particular side—that is, between the basal ganglia and the occiput, its relation to them being inferred from the extent of the defect (vide *An Introduction to Clinical Perimetry*, by H. M. Traquair).



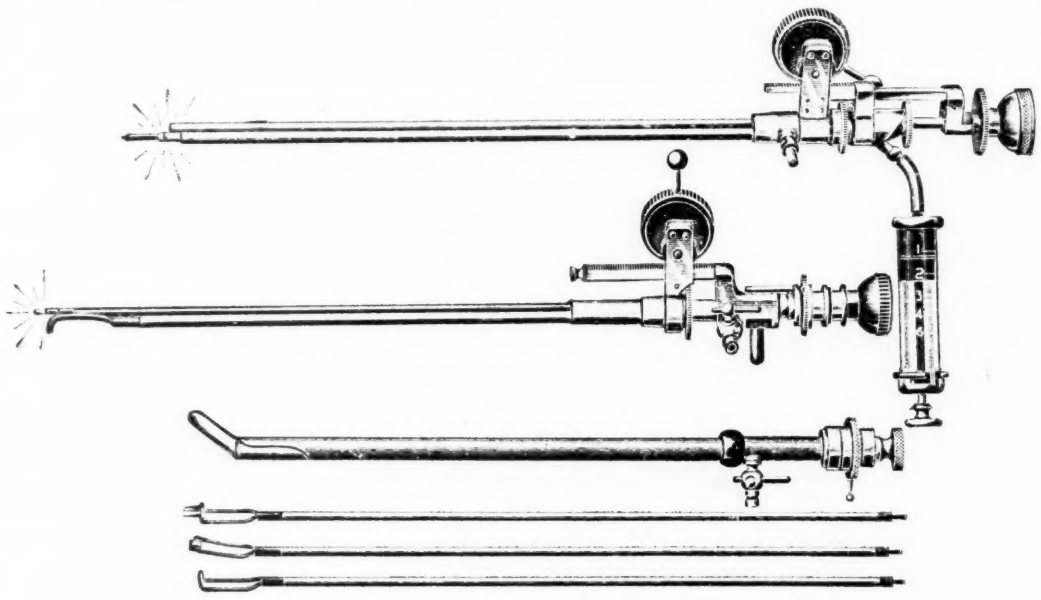
When separate charts are used for each eye these tests can be most efficiently made by superimposition, but double charts for right and left eye are very widely used, and they have their advantages for filing purposes. They are printed with the right and left charts on the one side of the paper, and if folded along their central vertical line an accurate comparison for heteronymous hemianopia, for what it may be worth, is obtained by the resulting superimposition. It is impossible, however, to fold the ordinary double chart to test by superimposition the congruity of a homonymous defect, which has become more important of late in view of the recent remarkable progress made in neurological surgery. In the hands of its skilled exponents a reasonable chance of extirpation of accurately localized tumours can now be offered.

I have had charts printed, of the ordinary double size, with the right-eye chart to the left of one side of the paper and the left-eye chart to the left of the other side of the paper. It is important that they shall not overlap, and that no printing or written matter shall appear behind either chart. These details are relegated to the margins. When folded along a vertical central line and held towards a light the right temporal field overlies the left nasal field, and the right nasal field overlies the left temporal field. A semi-transparent paper has been used to make this comparison more easy. I feel that ophthalmic surgeons whose perimeters employ double charts will have noticed the shortcomings of the charts available, and may find the new form suggested a useful one.

The charts are of 10 cm. diameter, suitable for the Rayner self-registering perimeter and for the McHardy instrument, but may be used with any non-recording perimeter. They are available from Messrs. Rayner (100, New Bond Street, W.1).

PROSTATIC RESECTOSCOPE

Mr. E. Canny Ryall, F.R.C.S.I., London, writes: Now that the wide applicability of endoscopic resection of the prostate, in skilled hands, is becoming recognized in this country, and several instruments are on the market, I should like to bring to the notice of urological surgeons my latest prostatic resectoscope. After an experience of, virtually, every resectoscope yet presented, I have no hesitation in commending this model as the most perfect yet available. The instrument differs from that introduced by McCarthy (and from every other with which I am acquainted) in having the telescope, lamp, and loop electrode all moving together on a single carriage activated by the rack and pinion movement. This unique principle secures constant illumination and magnification of the loop. Moreover, the whole of the loop is visible, so that during each cut, whilst the lower portion of the loop is embedded in tissue, the upper part is clearly seen. The whole procedure is thus at all times under visual control. The excursion of the loop is one and a half inches, so that large "slices" of obstructing prostatic tissue may be reamed out. The loops are rigid and as thick as is compatible with satisfactory cutting in an aqueous medium activated by a relatively cheap spark-gap type of endothermy machine. If a valve type of machine is employed, a thicker and more durable loop may be substituted, but a slower cut is necessary for adequate haemostasis. The moving needle incorporated in the working parts shown in the upper sketch is also, I believe, unique. It enables minor obstructions to be infiltrated with local anaesthetic, and the resection carried out thus painlessly in suitable cases. The large faucets and irrigating system keep the field clear, and in over eighty consecutive cases carried out by me and my assistant, Mr. Terence Millin, haemorrhage has caused us no concern whatsoever.



The instrument is made for me by Messrs. Thackray of Regent Street, London, W.1.

A CONUNDRUM BY WIRELESS

BY

CHARLES E. S. HARRIS, M.B., Ch.B.
SURGEON, CUNARD STEAM SHIP COMPANY, LIVERPOOL

The advent of wireless has in many ways lightened the great burden of responsibility that lies on the shoulders of the captains of all ships at sea.

Twenty years or so ago the captains of small ocean-going freight steamers with no surgeon aboard had to rely entirely on their own modest stock of medical and surgical knowledge for the treatment of members of their crews seriously injured or taken ill at sea. The compulsory fitting of wireless installations into all foreign-going cargo ships has changed all that. Nowadays a captain, faced by a puzzling medical case or a serious accident aboard his ship, does not hesitate to appeal for advice by wireless to the surgeon of the nearest passenger liner. If the two ships are within reasonable distance of one another and the case seems to be one demanding professional treatment, the captain of the cargo steamer may find himself relieved of his case altogether by actual transfer of it to the passenger liner's hospital. Otherwise, if the case is not serious and can be treated adequately enough aboard the freight ship, the passenger liner's surgeon will send advice by wireless, and may continue to do so for as long as the two ships remain in wireless communication with one another.

Thus it is that wireless has added a considerable amount of worry to the liner surgeon's life at sea, and has thrown on him an obligation that almost (if not quite) transgresses the shore code about "covering" unqualified practice.

I have myself been appealed to by wireless on a good many occasions now. Once it was my duty to go, in a ship's boat in mid-Atlantic, to the surgical rescue of a Furness Withy freight steamer's fireman who, some hours before and a hundred miles away, had had his arm torn off through the elbow-joint. Here I found the case had been treated on perfect "first aid" lines with a tourniquet round the upper arm and the wound cleaned antiseptically and beautifully dressed. On another occasion I was appealed to by a harassed skipper who wired "Have a sailor who has pulled his foreskin back and we can't get it forward again. What are we to do?" In this case the wireless operators of all ships within a thousand-mile radius must have been vastly amused, had they cared to transcribe my lengthy Morse reply, at finding themselves in possession of full information on the treatment of an acute paraphimosis!

It is my most recent experience, though, of the terrors of medical diagnosis and treatment by wireless at sea that has occasioned this article. The whole correspondence as set out below demonstrates very clearly, even when one's informant is intelligent, painstaking, and precise, how difficult it is to make a reasonable diagnosis. It has been said that a diagnosis is the shot made by the man who is most nearly correct. Well, failing to make a diagnosis at all, the unfortunate ship surgeon is then confronted by the difficulty of advising a course of treatment that will serve to meet the needs of the half-dozen or more disorders from which his distant and unseen patient may be suffering.

On October 23rd, in mid-Atlantic, my captain handed me the following radio message he had received:

> FROM CAPTAIN OF "C———" TO CAPTAIN OF "LACONIA." HAVE GIVEN MEDICAL ADVICE TO STEAMSHIP "DEPTFORD" BOUND FOR ANTWERP. HE SUGGESTS TRANSFERRING PATIENT TO YOU. URGENT.

Then followed a copy of the radio message sent by the captain of the *Deptford* to the surgeon of the *C*———:

> PATIENT IS AN APPRENTICE, AGED 17. ILL SINCE OCTOBER 14TH. FOR PAST FIVE DAYS PATIENT HAS BEEN NORMAL DURING EACH DAY TILL 3.30 P.M., AT WHICH TIME SEVERE PAINS COME IN STOMACH, ACCOMPANIED BY SHIVERING AND VOMITING BILE, WITH COLD BREATH, AND TEMPERATURE RISING TO 105°–106° AFTER THESE SPASMS. PATIENT BECOMING WEAKER. WOULD LIKE MEDICAL ASSISTANCE IF POSSIBLE. OPERATED ON PREVIOUSLY FOR APPENDICITIS.

Accompanying these messages was a direct signal to us from the *Deptford*:

> PATIENT NO IMPROVEMENT. AM TREATING ACCORDING TO ADVICE RECEIVED. AFRAID SURGICAL ATTENTION NECESSARY. CAN I OBTAIN ASSISTANCE FROM YOU?

After considering these messages I had the following reply wirelessed to the *Deptford*:

> WE HAVE COPY OF YOUR ORIGINAL MESSAGE TO "C———" RE PATIENT'S CONDITION. PLEASE SEND NOW PARTICULARS OF YOUR RECENT AND PRESENT TREATMENT AND EXACT LOCATION OF PAIN AND DATE OF APPENDIX OPERATION. SHALL BE PLEASED TO SEND YOU ALL POSSIBLE FURTHER ADVICE. WEATHER HERE, STRONG EASTERLY GALE AND HEAVY SEA AND SWELL.

Late that evening we received the following additional information:

> PRESENT TREATMENT, LOW DIET: ICE BY MOUTH: TWENTY DROPS OF LAUDANUM DURING TO-DAY. ENEMA GIVEN THIS MORNING: RESULTS SATISFACTORY. NO TROUBLE PASSING URINE. SAME TREATMENT PAST THREE DAYS. DURING SPASMS OF PAIN WE TRIED ICE TO STOMACH BUT PATIENT FINDS MORE RELIEF FROM HOT BOTTLE. PRESENT CONDITION AT 6 P.M.: TEMPERATURE 104°, PULSE 120, RESPIRATION 26. PATIENT'S TEMPERATURE WAS NORMAL TO-DAY TILL 4.15 P.M., WHEN PAINS RETURNED. SLIGHT CONSTANT PAIN IN LEFT SIDE OF STOMACH JUST BELOW RIBS AND SPREADING ROUND TO NAVEL. SPASMS RETURN WITH INCREASED SEVERITY EACH AFTERNOON. APPENDIX OPERATION ABOUT TEN YEARS AGO. SAME WEATHER HERE.

Here, certainly, was a conundrum. Was the case a surgical one? The captain of the *Deptford* believed it to be so. I guessed my colleague in the *C*——— thought so too, hence the shifting of the messages from the *C*——— to the *Laconia* as we were much nearer the *Deptford*. The transferring of an "acute abdomen" from one ship to another was going to be a great responsibility and an anxious one—probably even an impossible job—in the heavy swell that was running at the time. The mere lowering of a boat to go, with all instruments, dressings, and assistants, to operate aboard the *Deptford*, was going to be hazardous enough in itself. On the other hand, if the case were a medical one, what was the matter with the patient? Had the *Deptford* just been to some ports in, say, Central America where the patient might have become infected with some tropical complaint? The signs and symptoms detailed by the captain of the *Deptford* were unusually and most commendably precise, and were a fine testimonial to the painstaking way in which the patient was being watched and cared for. Many important pieces, though, were naturally and quite excusably missing from this puzzle picture.

As it happened, among our passengers was a British professor of surgery returning from a surgical convention in the United States. I sought him out and found him in the captain's company, where the three of us had a consultation on the case.

A specialist has been defined, unkindly, as being a man who knows more and more about less and less. He has also been defined as being a man who wants all your teeth pulled out before he makes another guess. In the present instance it was scarcely better than mere guesswork for any of us. The professor, regarding the scanty information with exclusively surgical eyes, opined that the case was a ruptured gastric ulcer that should be operated on the moment the man, then perhaps sixty miles away, could be got at. Regarding the information from the point of view of the general practitioner—for a ship surgeon has to be something of a surgeon, an all-round physician, and a bit of an aurist, oculist, alienist, dentist, dermatologist, dietitian, cardiologist, gynaecologist, neurologist, pathologist, laryngologist, midwife, "mortician," and many other things—I ventured to suggest that the

case might be a malaria. I got "pooh-poohed" by my captain for that, on the score that the patient was too young to have malaria.

In the end the captain was requested to send the following message to the *Deptford*:

YOUR EXCELLENT DESCRIPTIVE MESSAGE RECEIVED. OUR SURGEON CONSIDERS PATIENT'S CONDITION LESS UNSATISFACTORY THAN ANTICIPATED. HE RECOMMENDS CONTINUATION OF HOT APPLICATIONS TO STOMACH AND ICE BY MOUTH. STOP LAUDANUM AND GIVE DOVER'S POWDER, TEN GRAINS FOUR-HOURLY TO PROMOTE FREE PERSPIRATION. REPORT CONDITION AT NOON TO-MORROW.

The next day we received the following report:

TREATING AS DIRECTED. SLIGHT PAIN. TEMPERATURE 98.2°. PULSE 72. SIMILAR CONDITION DAILY, TEMPERATURE RISING ABOUT 4 P.M. IF NO CHANGE WILL TRANSFER PATIENT ASHORE AT THE FIRST OPPORTUNITY. WEATHER MODERATED. THANKS.

This, especially the drop in the pulse rate, seemed satisfactory as far as one could judge, while it served to strengthen my idea that the illness might be malarial in nature. Accordingly I sent the following reply:

THANKS FOR REPORT. IF THERE IS ANY POSSIBILITY OF PATIENT HAVING BEEN INFECTED WITH MALARIA GIVE QUININE TEN GRAINS FOUR-HOURLY.

To our disappointment we got no further messages from the *Deptford*.

On the *Laconia's* arrival at Liverpool this correspondence was reported to the company's medical superintendent. At my request he very kindly made inquiries of the Watts Shipping Company, the owners of the *Deptford*. He was sent a copy of the *Deptford* captain's first report to them from Antwerp. It ran as follows:

RE CADET B———. THIS LAD HAS GIVEN ME CONSIDERABLE ANXIETY DURING THE PAST 15 DAYS. I HAVE HAD HIM IN THE SHIP'S HOSPITAL, DURING WHICH PERIOD HIS TEMPERATURE HAS BEEN RISING IN THE EVENINGS TO 105, 106, AND ONCE TO 107, DROPPING AGAIN TO NORMAL BY MORNING. I RADIOED FOR ADVICE TO VARIOUS SHIPS AND THE NEAREST APPROACH TO DIAGNOSIS WAS GIVEN ME BY THE SURGEON OF THE "C———," WHO SAID ACUTE OBSTRUCTION OF THE BOWELS REQUIRING IMMEDIATE SURGICAL ATTENTION.

I HAD DECIDED TO LAND THE LAD AT FALMOUTH. HOWEVER, THE DAY PRIOR TO PASSING THERE, WHATEVER THE OBSTRUCTION WAS IT PASSED AWAY AND SINCE THEN HE HAS BEEN CONVALESCENT. I AM ARRANGING TO HAVE HIM THOROUGHLY OVERHAULED AT ANTWERP AND WILL ADVISE YOU LATER.

Well, this did not help to elucidate matters much. It gave us the satisfaction, though, of knowing that the patient had survived the treatment, anyway. The Watts Shipping Company subsequently forwarded a copy of a certificate given by a doctor in Antwerp. The doctor stated he had "attended the apprentice, who, in my opinion, has been suffering from enteric fever." Apparently that was only another guess, for no mention was made of any bacteriological examination having been made to confirm the diagnosis. The Antwerp doctor, though, had certainly had an advantage over the rest of us in that he had at least *seen* the patient, even though the patient was convalescent at the time.

The boy eventually reached England and came under the care of his own doctor. Here, in his own home and in the early days of December, the undoubtedly correct diagnosis of his complaint was made. In answer to subsequent inquiries of mine, the owners of the *Deptford* kindly informed me that, on that particular voyage, the *Deptford*, which had loaded in Wales, went to Alexandria and thence across the Black Sea to the Sea of Azov; thence to Boston and other ports on the east coast of the United States. She was on her trip from America when the apprentice was taken ill.

It will be seen from the foregoing that this case aroused in the minds of four medical men suggestions of such varying troubles as intestinal obstruction, malaria, some complication following an appendicectomy, typhoid, and ruptured gastric ulcer. What was the final diagnosis? I think the very best of diagnosticians, limiting themselves to a study of the wireless information supplied to the professor of surgery and myself on October 23rd, will have a very good excuse if they fail to name correctly the boy's complaint!

Nova et Vetera

TARANTISM IN THE SIXTEENTH AND SEVENTEENTH CENTURIES

The March number of *Aesculape*, devoted to mental disease in art, history, and literature, contains an article by Dr. Jean Avalon, entitled "Les Mordus de la Tarentule." It is probable that Ferrante Imperato was the first to mention the dangerous properties of the tarantula in his *Histoire Naturelle*, published in Naples, after his death, by his son in 1599. There were, it would seem, in those days tarantulas and tarantulas; a member of the family living in holes in the earth might bite, but not harm. But another member, called *Solofizzi* by the natives, was larger and black, and its bite was followed by a swelling. The symptoms of its victim recurred every summer, and there was no recovery, except through violent exercise, followed by fatigue and sweating. This cure was achieved by the playing of a guitar, which set the patient dancing and jumping till he was exhausted.

A century later we find much more circumstantial and picturesque accounts of the symptoms of tarantism and their treatment. In his *Dissertatio de Anatome, Morsu et Affectibus Tarantulae*, published in Rome in 1696, Baglivi stated that June was the month of the amours of the tarantula; it was also most venomous at this season. The seat of its bite became swollen, inflamed, and surrounded by a livid or black aureole. General malaise, anguish, profound sadness, and laboured breathing followed, the patient's voice failing him. There were seasons and places in which the tarantula ceased to be noxious. In the winter, for example, and in exile, it lost all its venom; and it became less dangerous when transported to the mountains. Information is lacking as to how this transport was effected and with what incidents in the process. Baglivi noted that the symptoms varied with the species; the most terrible was the tarantula of a bluish hue. It infused black, sad, and desperate ideas with its venom, the patient falling into a profound melancholy and seeking desert places, tombs, and sometimes committing suicide. Other victims indulged in wild freaks of the imagination, plunging into mud with delight. The bitten woman, losing all restraint, delivered herself of screams and her own clothing without any shame, abandoning herself to the most impudent debauch. Others fell into a state of profound stupor, dying unless promptly treated. In such cases Baglivi found he had to break with all the art of Aesculapius, which was impotent, and to take refuge in the art of Orpheus, a concert being more effective than the whole bag of tricks of the pharmacist. The musician who was summoned played different airs on his instrument, until he found the one which gradually drew the patient from his lethargy, animated him gently, making him move his feet and hands and finally get up and dance. But woe betide him if a false note was struck; he would then become troubled, shudder, and relapse into his former state. Four or five days of such dancing treatment were usually sufficient to cure the patient, but only temporarily. He was subject to relapses once a year on the same day, and even the same hour.

Later writers took up the tale where Baglivi left it and embellished it further, discovering that the subjects of tarantism found certain colours agreeable and others not. The disease lasted only as long as the tarantula lived, and it danced to the same air that appealed to its victim. The patient would be asked in exactly what locality he had been bitten, and the colour of the offending tarantula. His friends would then hie them to the spot, play various tunes, and note that the tarantula which responded by dancing to a specific tune possessed the colour indicated by the patient.

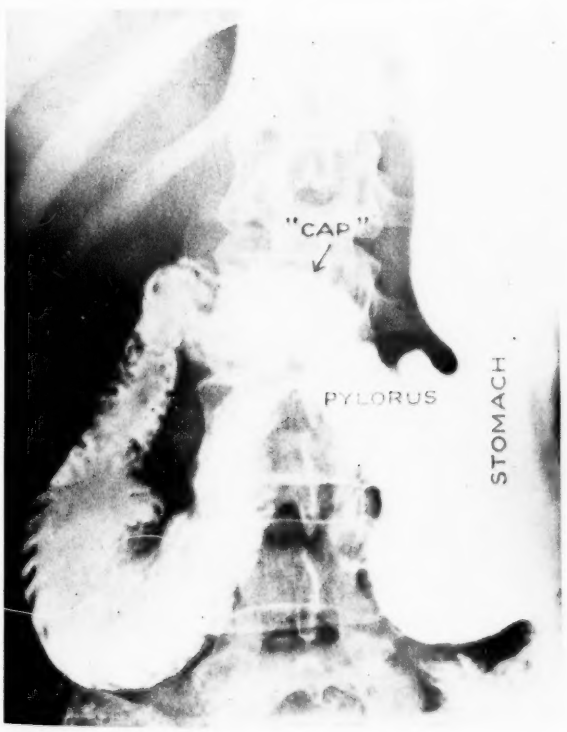
Fielding Garrison, in his *Introduction to the History of Medicine*, notes that a description of tarantism is given by Athanasius Kircher in his *Magnes Sive de Arte Magnetica* (1643).

J. F. BRAILSFORD: RADIOGRAPHIC INVESTIGATION OF LUMBAR AND SCIATIC PAIN

FIG. 1.—Radiograph showing general coarseness of bone trabeculae of left side of pelvis and upper half of femur, and increase in density. Bones of pelvis show pressure deformities; pelvis is flattened and walls of acetabulum are being pushed into pelvis. The transverse fracture of upper end of femur is characteristic of Paget's disease of bone.

FIG. 2.—Radiograph of left side of pelvis of woman aged 52, showing marked increase in density of acetabular region with almost complete absorption of lime salts from symphysis and ramus of pubis and ischium. No definite striation of involved bone of ilium indicating trabeculae of cancellous tissue can be seen, but normal contour of pelvis is preserved. Secondary carcinoma.

D. F. HEGARTY: CHRONIC DUODENAL ILEUS



Showing duodenal ileus with distended duodenum.

K. HUNTER: METAL RING ROUND TONGUE

Lateral view showing ring *in situ*.

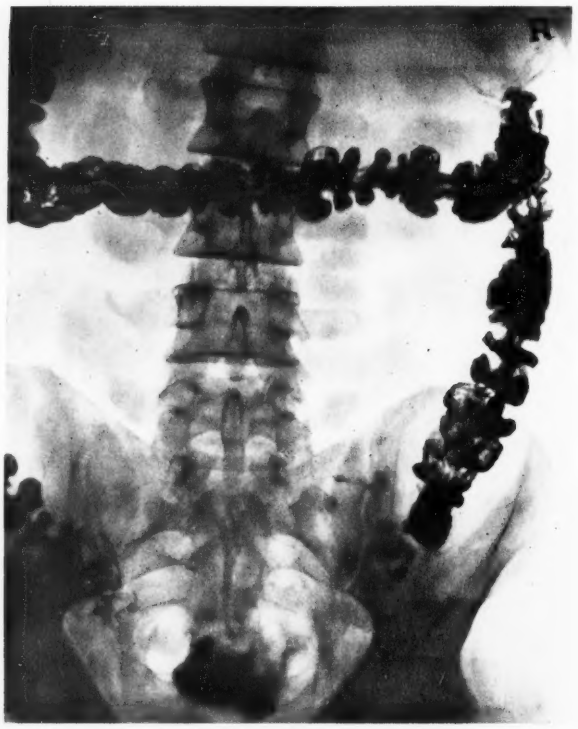


FIG. 1.—Case 1. Twenty-four-hour picture showing proximal portion of the appendix irregularly filled and a shadow, apparently a piece of lead shot which at the time was queried as being the tip of the appendix.

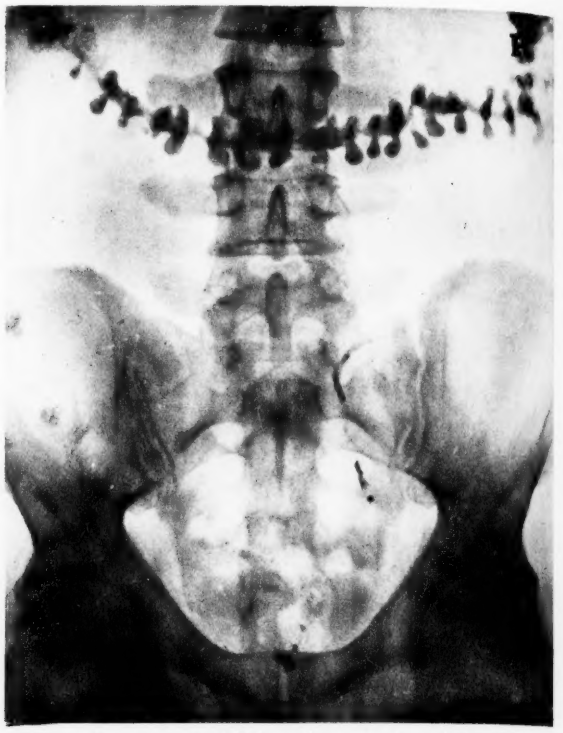


FIG. 2.—Case 1. Forty-eight-hour picture showing a definite appendix residue and depicting a long irregularly filled appendix with a bulbous tip in which the lead shot is situated.

FIG. 3.—Case 2. Forty-eight-hour picture. Definite residue in the appendix, which is partially stenosed.

FIG. 4.—Case 3. Forty-eight-hour picture showing a small residue at tip of appendix.

H. R. FRIEDLANDER AND J. E. BOWEN: CHRONIC APPENDICITIS IN SHANGHAI

FIG. 5.—Case 4. Forty-eight-hour picture showing slight residue in the caecum and ascending colon through which the appendix could be seen retrocaecally.

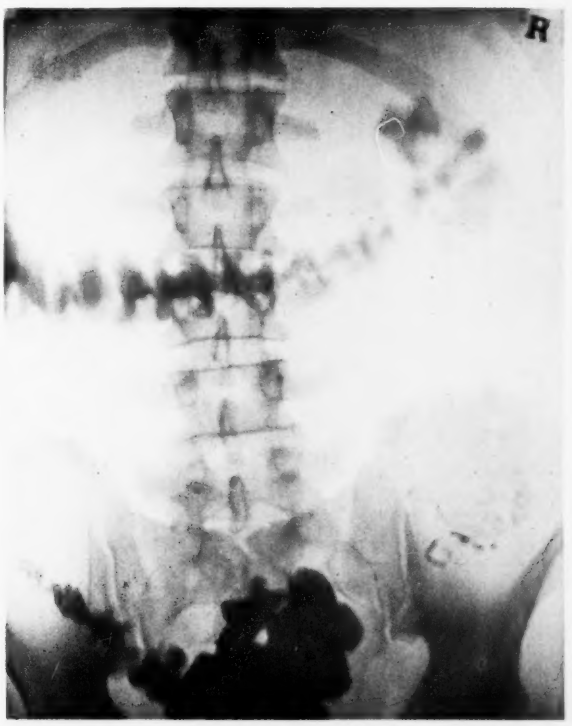


FIG. 6.—Case 5. The forty-eight-hour film showing caecal and appendix residue with some small concretions in the appendix.

L. MARGARET MASTERMAN: AN UNUSUAL CASE OF MENINGITIS ASSOCIATED WITH HAEMATURIA

FIG. 1.—Antero-posterior encephalograph.

FIG. 2.—Lateral encephalograph.

ALEX BROWNLEE: CONGENITAL ABSENCE OF HEAD OF FEMUR

FIG. 1.—Girl, aged 5. Radiograph showing absence of head of femur.

FIG. 2.—Mother, aged 44. Radiograph showing absence of head of femur and thickening of necks.

ALEX BROWNLEE: CONGENITAL ABSENCE OF HEAD OF FEMUR

FIG. 3.—Boy, aged 7. Radiograph showing condition resembling double Perthes's disease.

F. B. MALLINSON: OSSIFICATION OF BOTH ACHILLES TENDONS

Radiograph showing wired bony fragment of left tendo Achillis.

British Medical Journal

SATURDAY, NOVEMBER 5th, 1932

THE NOBEL PRIZE IN PHYSIOLOGY AND MEDICINE

The Nobel prize in physiology and medicine has been awarded jointly to Sir Charles Sherrington and Professor E. D. Adrian. In offering our congratulations to the recipients of this signal honour we shall be expressing the feelings not only of the whole medical profession, but also of workers in many branches of science in this country and all over the world. Although, as the existence of the Nobel prize signalizes, medicine and science know no national boundaries, we may claim with justifiable pride that this award, while primarily a recognition of two masters of experimental physiology, reflects honour upon English medicine and especially upon English neurology. For, as the great man has usually been the first to admit, the flower owes much to the soil, and the greatest scientific discoveries have often been the outcome of a happy conjunction between a man and his times. To be born at the right moment is a considerable part of genius.

When Sir Charles Sherrington began his physiological researches clinical neurology in England was at the height of a wave of remarkable progress. Hughlings Jackson was illuminating the functions of the nervous system, throwing light especially upon the interrelations of different levels, and simultaneously with Ferrier establishing the conception of cerebral localization. Sir Charles Sherrington recently said that he envied the clinical neurologist his co-operative patient, but it is difficult to believe that clinical methods unaided could have carried neurology much further than Jackson took it. The moment was ripe for a great advance in experimental physiology, and the history of the development of neurophysiology during the last forty years is largely an account of the work of Sir Charles Sherrington and his pupils. This is too well known to need description. Its nature cannot be better summarized than in the title of his best-known work. It has been essentially a progressive elucidation of *The Integrative Action of the Nervous System*. A quarter of a century elapsed between the publication of *The Integrative Action of the Nervous System* and the delivery of the Hughlings Jackson Lecture by Sir Charles Sherrington last year. To compare the two is to acquire a bird's-eye view of the progress of neurophysiology during this period. To a Rip van Winkle who fell asleep in 1906 much of the Hughlings Jackson Lecture would be unintelligible. The reflex as such is no longer the unit of neural function: the contributions of single afferent and single efferent nerve fibres to reflex action are separately measured. Neurophysiology is working with a microscope of higher power. This startling change in experimental method is due in great measure to Professor Adrian. Working at first with the late Keith Lucas, he early became interested in the problems of conduction of the nerve impulse. Once more the times conspired to aid the man, for the technical developments associated with the growth of wireless provided electrical methods of investigating the nervous system which far surpassed all previous methods in delicacy, and of which Professor Adrian was quick to take advantage. By these means he has recorded the electrical disturbances associated with the passage of impulses in single nerve fibres, *The Basis of Sensation*. Not only are these observations intrinsically important, but, as the Hughlings Jackson Lecture shows, the application of Professor Adrian's methods to the problems investigated by Sir Charles Sherrington is already yielding valuable results. The Nobel prize, therefore, is a fit recognition of the debt which the whole world owes to these investigators, not only for the revolution in our conceptions which they have made in the past, but also for that "enhanced promise for neurological investigation" which, in Sir Charles Sherrington's words, "the present offers."

MECHANICS OF THE URINARY TRACT

When the opaque meal made it possible for radiologists to study the living, functioning alimentary canal they soon began to revolutionize the anatomy and physiology which had been built up from observations on dead bodies. The introduction of excretion pyelography is likely to have a similar effect on our conceptions of the mechanism of the urinary system. Although direct pyelography has been used for some years in the diagnosis of pathological states, radiologists hesitated to describe conditions as normal when they were made visible by the forcible injection of a foreign substance from below upwards. Now that research has produced an opaque material so non-irritating that it can be injected into the blood and excreted by the kidney, the phenomena seen in apparently healthy persons may reasonably be described as normal.

Dr. Roger Guichard,[1] in a recent paper, describes the passage of uroselectan B through the kidneys of healthy people. He finds, as do almost all students of the normal, an extreme degree of variation. Kidney pelves may be bifurcated, ampullary, or ramificatory, and the disposition of the calyces shows an almost infinite diversity. Dr. Guichard supports Legueu's description of the passage of urine down the ureter as due to a neuro-muscular peristalsis, and not to a hydraulic mechanism or to gravity. Intermittent

[1] *Arch. d'Élec. Méd.*, 1932, xl, 145.

contractions pass the urine along according to a rhythm which varies with the muscular tone of each subject. The bulb of the ureter is not constantly present, and when a shadow corresponding to it is seen it is not always at the lower and external part of the pelvis of the kidney ; it may be several centimetres lower down. The calyces are seen to fill, becoming a little rounded, at the same time as the pelvis and the upper part of the ureter are distended with urine. Dr. Guichard has not, however, observed the contractions which, according to Legueu, empty the calyces into the pelvis. When the calyces, pelvis, and upper part of the ureter are filled, a contraction of the pelvis occurs, and this contraction starts at the highest point and proceeds downwards: the contractions passing both upwards and downwards, which have been noticed in retrograde pyelograms, are not seen in excretion pyelography. After several contractions the pelvis empties itself, and a series of regular waves conveys the urine into the bladder. The two pelves in one subject do not necessarily contract simultaneously or in a similar manner, and there seems to be variable muscular tone, indicating independent innervation of the two sides. Dr. Guichard says that many of the phenomena described by those who have studied opaque injections are in fact spasmodic effects due to the method. By analogy with other parts of the body it seems probable that he is right, and that the simple peristaltic process which he describes is the normal mechanism of elimination from the kidney.

Dr. Einar Thomsen in 1930[1] described the normal female urethra as having a curious angular profile, quite unlike the usual anatomical description, and he now publishes a further study on the closing mechanism of the bladder.[2] Five factors have been described as taking part in the closing of the urethral orifice. The author is unable to ascribe any importance to the first—the tangential relation of the urethra to the base of the bladder—since in the young this hardly exists at all. He finds it difficult to decide what part the sphincter vesicae plays at the internal urethral orifice: it can certainly resist considerable pressure from the bladder, and can close firmly round a cystoscope. Dr. Thomsen publishes radiograms showing this sphincter closed. The intermediate sphincter forms a sling-shaped loop in the upper part of the anterior wall of the urethra, while the external sphincter is a cuff-shaped tunnel opening backwards, around the lower part. The fifth factor is the external closing mechanism—the layers of muscle surrounding the urethra. The closing mechanism is supposed by some authorities to depend almost entirely on these, but Thomsen here publishes radiographs which indicate that the closing of the bladder is primarily a function of the urethra itself, and that these external supports only play a secondary part. He is convinced that incontinence is associated with the opening out of the angle he has described in the urethra, and that it can best be remedied by any procedure that tends to support or tighten the anterior wall.

[1] *Acta Radiol.*, 1930, xi.
[2] Ibid., 1932, xiii, 433.

Another interesting fact recently revealed by intravenous pyelography is the dilatation of the calyces, pelvis, and ureters in normal pregnancy.[1] W. F. Mengert and H. P. Lee have investigated twenty multiparae and twenty-one primiparae by taking stereoscopic pyelograms before and after labour. They found that the dilatation was commoner on the right side than on the left, but was present in some degree on both sides in 80 per cent. of cases. Involution begins within twenty-four hours of labour and is completed in about ten days, more slowly in primiparae than in multiparae, and more slowly in the infected than in the normal cases.

NEUROLOGY AND THE AUTONOMIC NERVOUS SYSTEM

In his opening address before the Neurological Section of the British Medical Association, published this week, Professor Bramwell reminds us that the establishment of neurology as a distinct branch of medicine is the product of the last hundred years. Its phase of rapid growth set in only in the latter half of the nineteenth century, but from then onwards progress was so vigorous that by the dawn of the present century it had become one of the most precise branches of medicine. Though advances are slower and more laborious as the years go by, the present generation can boast of such names as Ramon y Cajal and Sherrington. The neurology which these workers have constituted treats of that part of the nervous mechanism which subserves the individual's awareness of, and reactions to, his environment—ultimately expressed in terms of movement. There is, however, another component of the nervous system whose function it is to acquire information of events occurring within the body itself, to correlate them, and thereby to regulate the fundamental metabolic and visceral processes of the organism. To this the name "autonomic nervous system" has come to be applied, and it is only in the past fifty years that attempts have been made to solve its intricacies. In spite of much research our knowledge of its workings is still in its infancy.

Investigation of the functions of the autonomic system has proceeded along two main lines—anatomico-physiological and clinical. The former owes its origin to Gaskell, Langley, and Anderson, whose researches have stood the test of time, and form the foundation upon which subsequent knowledge has been built up. A distinct advance was made when it was realized that a close relation existed between the autonomic nervous system and certain of the ductless glands. Langley showed that the action of adrenaline was indistinguishable from that of universal sympathetic stimulation, and more recently the secretion of the thyroid was shown to have a very similar action. Histology demonstrated that the cells of the medulla of the suprarenal were in direct anatomical continuity with fibres of the sympathetic, and it is now known that the pituitary

[1] *Amer. Journ. Obstet. and Gynecol.*, August, 1932.

gland is connected with the floor of the third ventricle by numerous nerve fibres. Naturally, search has been made for a central regulating mechanism in this complex system, and much evidence from comparative and experimental anatomy and physiology suggests that this is situated in the diencephalon—more particularly in its ventral portion, the hypothalamus. Recently, evidence has been produced showing that the frontal lobes are directly connected with the centres of the hypothalamus, and, though the proof is far from complete, it seems reasonably certain that there is a direct neural connexion between the cortical centres, the hypothalamus, the autonomic nervous system, the ductless glands, and the involuntary muscles and glands throughout the body.

The clinical approach to the problems of the autonomic system is as old as medicine itself. Moreover, from time immemorial it has been recognized that changes in the emotional state are accompanied by changes in the physical condition of the individual. Examples could be multiplied indefinitely, but a few will suffice. In many cases the borderline between an anxiety state of purely psychic origin and Graves's disease, with all its physical symptoms, cannot be drawn. Again, the syndrome of narcolepsy provides an instance of muscular weakness and complete loss of tone brought on by emotion. Slowly the two paths of approach are converging. The clinician finds associations which must surely have an anatomical basis; the anatomist and physiologist demonstrate mechanisms which as surely must play some important part in the body's economy; but the rift which separates these two paths is still a wide one. The relation between structure and function is a problem for the future to solve—a problem of enormous difficulty but supreme interest. The surgery of the autonomic system represents an attempt to span this gap. In our present state of knowledge it is essentially an experimental study to be judged by its results. Up to the present the most encouraging claims have been made for the treatment of Raynaud's disease by cervical sympathectomy, and there is no doubt that the immediate clinical improvement is remarkable, although the permanence of benefit is more doubtful. Similarly, good results are claimed for the treatment of Hirschsprung's disease by lumbar sympathectomy, while—but with less rationale—the same treatment has been extended to obstinate constipation in adults, though up to the present with results which do not justify any expression of opinion as to its merits. Other conditions for which sympathectomy has been performed include angina pectoris, retinitis pigmentosa, scleroderma, localized hemiatrophies, and lipodystrophies. In these it must be admitted that the surgical treatment is empirical, and it is to be hoped that all workers performing sympathectomy in such cases will realize its essentially experimental nature and apply a rigid standard of criticism to their results, lest operations be performed for any obscure condition which appears even remotely to be associated with the involuntary nervous system.

IN A GOOD CAUSE

In our correspondence columns this week we print an appeal on behalf of the Royal Medical Benevolent Fund from its president, who for all his 87 years has plenty of energy left to put into this good cause. The letter is brief and simply worded, but none the less eloquent. Sir Thomas Barlow asks his brethren in the medical profession to help the Fund to give a Christmas present of 30s. to all the annuitants and to the poorest of the grantees. "In these hard times old and infirm doctors, widows and children of deceased doctors, are often hard pressed even for the bare necessities of food, clothing, and fuel. Anything that is given to us for this object will be a real boon." The Fund, we may remind our readers, exists to relieve suffering, poverty, and distress resulting from accident, ill-health, misfortune, or other calamity affecting medical practitioners, their widows, and dependants. It is administered by a medical committee elected by the subscribers. It was established in 1836 and incorporated in 1915, and has always commanded the co-operation and support of leading members of the profession. Every care is taken to ensure that relief is given only to deserving cases. Applications for grants from those in difficulties are received by the secretary, and investigation is made privately into the circumstances. Every application must be supported by a subscriber and bear his signature, and be accompanied by letters of recommendation, of which one at least must be from a doctor. Whenever possible all applicants are personally interviewed. The application, together with a full report on the investigation of the case, is submitted to the Case Committee for its consideration and decision. No canvassing for votes is required, and thus the applicant is spared the publication of details of a private or painful character. Grants are made to all deserving cases, and are for one year, usually paid quarterly. Requests for the renewal of a grant are reviewed from year to year, and where the circumstances are unchanged the grant is renewed and sometimes increased. From the most urgent and most needy of those grantees who have reached the age of 60 the committee selects annuitants, to whom a fixed yearly sum is paid for life. Unfortunately, the lack of a sufficient income has hitherto compelled the Fund to fix the maximum annuity at £40, which is often quite inadequate. The grants are paid out of the income from subscriptions and donations; annuities are paid out of the income from invested capital. Subscriptions and donations—and special gifts towards the Christmas Present Fund—should be sent to the honorary treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1.

THE SCHICK TEST IN INFANCY

J. Greengard[1] reports his observations on the Schick test on 584 children up to the age of 3 years. In the first week of life positive reactions were obtained in nine (17.6 per cent.) of the fifty-one infants examined. The number of reactions then progressively increased, the greatest being found in the age group 9 to 12 months. In the group over 1 year of age 69.8 per cent. were positive. In 114 infants the loss of immunity as shown by the transition of a negative to a positive

[1] *Arch. Pediat.*, September, 1932, p. 526.

reaction was demonstrated. The great variability in the duration of passive immunity in infancy was shown by the fact that a few infants presented a loss of immunity as early as the first to the third month of life, while in some this immunity outlasted the first year of life, and in a few instances eighteen months. Like other writers Greengard maintains that while a positive Schick reaction indicates a lack of specific immunity in the newborn a negative reaction has no significance at this age, since a large proportion of infants without antitoxic immunity show no reaction to intradermal toxin ; the same applies to other skin irritants. In a group of 100 mothers and their newborn infants on whom comparative Schick tests were performed a definite lack of agreement was found between their respective reactions. Of the newborn infants of positive mothers 60 per cent. gave negative reactions, and in every case in which the reaction was positive the infants' reactions were less intense than the mothers'. All the infants of negative mothers showed a negative reaction.

EVOLUTION OF HEAT BY THE DYING ORGANISM

The idea that living organisms when killed evolve heat is not new, although experiments, we believe, have so far yielded indecisive or negative results, perhaps because the tests have been made with the calorimeter, a clumsy instrument for the purpose. In his Hurter and Driffield Lecture—a lecture which is a memorial to two pioneers in photochemistry—at the Royal Photographic Society on October 25th, Professor E. C. C. Baly, F.R.S., of Liverpool University, brought forward some more definite evidence on this point. Professor Baly's lecture was on the photosynthesis of plants, but at the close he permitted himself this speculative essay, and described what had been done in his own laboratory. The experiments were made with a view to testing the theory that when a living organism is killed there may be expected some evidence of the escape of the energy associated with the vital processes—in other words, evolution of heat. Certain plants, such as tomatoes, asparagus, and lettuce, were injected with poisons—formaldehyde, chloroform, and prussic acid. Each alternate member in a series of thermocouples—about twelve or thirteen, according to the size of the organism—was inserted into the plant, and the whole connected to a sensitive galvanometer. Within a minute or so of the injection of the poison there was quite definite evidence of the evolution of heat as shown by the galvanometric oscillations. These oscillations were always of a particular type, and Professor Baly suggested that each oscillation represented the death spasm of one of the individual cells of the plant as the poison succeeded in penetrating through the tissues. That, however, was not the most interesting thing about the experiment. It appeared that the amount of energy given out in this way by the dying cells depended directly upon the time since the plant had been plucked or gathered. With an asparagus shoot which had been gathered four days previously practically no energy was given out at all, although the housewife would have been hard put to it to say that the shoot was not fresh. The lettuce leaf lost its power of radiation of energy within twenty-four hours, but if the lettuce leaf which had been plucked twenty-four hours before was then irradiated by ultra-violet rays for half an hour the original amount of energy was restored to it, as shown by the galvanometer. Applying the same experiment to oysters, exactly the same thing happened, except that the curve recorded by the galvanometer was not suggestive of spasmodic reaction, but rose steadily to a maximum and then declined. The effect of ageing was the same in the case of oysters as in that of plants. In oysters so treated three days after dredging the evolution of heat was quite marked ; in other oysters which were not treated until thirteen days the effect was so small as to be almost unmeasurable. Some freshly delivered American oysters purchased in the open market were found to have a " dying " record practically identical with those of English oysters which had been dredged seven days previously. There appears to be no doubt about the rise in temperature as recorded by the galvanometer, and, whatever the explanation may be, one would suppose that it is connected in some way or other with the sudden or gradual extinction of the vitality of the organism. The experiment with the lettuce recalls some American work which has shown that freshly cut leaves have a definite antirachitic value, which disappears after twenty-four hours and can be restored on exposure to ultra-violet radiation, again illustrating the connexion between general vital processes and photosynthesis.

OFFICIAL ADVICE ON NUTRITION

Recent work on nutrition by the Medical Research Council has led to the issue of a circular by the Ministry of Health to all maternity and child welfare authorities, making certain definite recommendations.[1] Dr. Helen Mackay's studies on nutritional anaemia in infancy have shown quite clearly that a deficiency of available iron, and possibly also of copper, in the diet of infants leads to susceptibility to infection—particularly colds, bronchitis, enteritis, and otorrhoea—and a tendency for these infections to become chronic. Dr. Mackay found that 45 per cent. of breast-fed infants and 51 per cent. of artificially fed infants suffered from this nutritional anaemia, which, though mild, was enough to double the mortality rate in the artificially fed group. The Ministry, therefore, recommends that iron and ammonium citrate should be given to infants as an addition to the feed, or that dried milk preparations containing iron, some of which are already on the market, should be ordered. The second recommendation is based on the experimental evidence of the relation between rickets and dental disease on the one hand and an inadequate supply of vitamin D and calcium on the other. The Medical Research Council has published six special reports on rickets and five on dental disease, and these have established beyond dispute that an adequate supply of calcium, phosphorus, and vitamin D will prevent and cure rickets, the vitamin enabling the growing child to utilize the calcium and phosphorus in the formation of normal bone tissue. Although severe rickets is rapidly disappearing the milder form is still widely prevalent in some areas of this country. It is also clear that faulty dentition is widespread, and experimental work strongly supports the view that vitamin D is essential for the production of perfect teeth. It is of the utmost importance that

[1] Circular 1290, Ministry of Health. London: H.M. Stationery Office. 1932. (2d.)

the diet of pregnant and nursing mothers and of infants and young children should include a sufficient supply of calcium, phosphates, and vitamin D. The vitamin is the constituent most likely to be lacking. The Ministry therefore recommends that fat fish, fish livers, egg yolk, milk, and butter should form a large part of the diets. There are certain brands of margarine on the market which contain adequate amounts of added vitamins A and D, and if margarine is to be used instead of butter these brands should be secured. Herrings, sprats, and mackerel are valuable, and of course cod-liver oil will always supply the deficiency provided it is of a kind guaranteed to contain a reasonable number of units of vitamin D. The third recommendation of the Advisory Committee points out that milk is an almost perfect food, rich in calcium and phosphorus, supplying a protein of high biological value, and providing the infection-resisting and calcifying vitamins A and D. The consumption of milk in this country is, it considers, far below what is desirable, and local authorities should continue to take every available opportunity of urging the increased use of milk, especially for children.

PELLAGRA IN CENTRAL ASIA

Pellagra is so incompletely understood that all new and carefully recorded reports of cases are welcome. Drs. J. Kassirsky and L. Burova, with a team of ten named collaborators, had opportunity to study seventy-four cases during 1930 and 1931 in the Hospital for Tropical Diseases at Tashkent, and have discussed their observations in a long and interesting paper.[1] They remind us that pellagra is to be recognized as a complex of five sets of symptoms: (1) alterations in the skin, (2) cachexia with general disturbance of metabolism, (3) disorders of digestion, (4) disturbance of blood formation, and (5) disorders of the mind and nervous system. These groups are not likely to be present, all of them, in every case, and in fact the skin changes were absent in 25 per cent. of their cases, though in some of these they did appear during relapses. In the authors' experience the most constant and arresting evidence of the disease was the cachexia, progressive and extreme, with conspicuous loss of muscle and fat, so that the patient looked a living skeleton and might weigh no more than eight stone. In briefest outline it may be said that their very complete report mentions cardiac dilatation, fall in blood pressure, atrophy of the liver with lessening of glycogen and bile-forming activities, diminution of free hydrochloric acid in the gastric juice, decrease or absence of diastase in the duodenum. In 65 per cent. the first symptoms indicated digestive disturbance, diarrhoea, and sore tongue, often preceding the skin eruption by a couple of months. Stomatitis occurred in about half the cases (twenty-six of these specially examined had all of them Vincent's bacilli and spirochaetes, sometimes to the exclusion of all other organisms) ; enteritis was early and caused the diarrhoea ; stools of 60 per cent. were alkaline, colour dark brown to yellow or white (difference from sprue) ; colitis appeared later ; in fact, the whole alimentary canal was in time attacked, from mouth to anus, and severely enough, they think, to account of itself for the extreme cachexia. Intussusceptions occur, ulcerations in a quarter ; intestinal parasites were numerous, but in proportions similar to those in a control series of local cases not pellagra. In 25 per cent. diabetes insipidus coexisted with diarrhoea and cachexia, a syndrome noted before in Central Asia, but only now recognized as a manifestation of pellagra. There is no definite anaemia, no haemolysis (another difference from sprue), but little blood regeneration (indicating loss of function of the marrow, which is found slimy at post-mortem, " like drip-honey "). Not many of the Tashkent cases were mental or nervous. Mortality was 28 per cent. ; treatment did little good, chloride of calcium and special diet eased the diarrhoea, without influencing the after-history of the case. Of the patients discharged in 1930, 30 per cent. relapsed in 1931. Pellagra has no test like the Wassermann, Widal, or Weil-Felix, so possibly all these cases might not have been accepted elsewhere, but they could hardly have been more carefully diagnosed. It is observed that pellagra is related to, but not caused by, poverty or under-nourishment, and that of these seventy-four cases a dozen came from well-to-do families. Nor can they be ascribed to eating maize, for all but two were in Europeans, with whose bread maize may not be mixed. Sambon thought it an infection carried by the sandfly *Simulium reptans*. It is certainly prevalent in the same countries at the same seasons as that insect. Others ascribe it to avitaminosis, but it prevails in summer when vitamins are plenty.

[1] *Arch. für Schiffs- u. Tropen-Hygiene*, June, 1932.

PROPERTIES OF HEATED AND RAW MILK

The effect of pasteurization on the nutritive properties of cow's milk is generally recognized to be a problem of major importance in relation to the health of children in urban populations. The United States Public Health Service has recently published a report[1] of an interesting investigation on this subject which was conducted by two sanitary engineers, assisted by four milk specialists. The authors state that 87.5 per cent. of the milk in American cities of 10,000 population is pasteurized, and that the investigation was conducted to determine whether there is any evidence that children who drink raw milk thrive better than those who drink the former. With the help of various State health departments, they obtained data for the weight and height of two groups of children of all ages between 10 months and 6 years. One group of 1,920 children had received no milk whatever other than heated milk. The other group of 1,836 children had received raw milk for more than half their lives. The height and weight curves of the two groups were found to be practically identical, and the authors concluded that " the growth-promoting capacity of heated milk plus the supplementary diet received by the average American child of 10 months to 6 years is not measurably less than the growth-promoting capacity of raw milk plus the supplementary diet received by the average American child of 10 months to 6 years."

[1] Public Health Reports, vol. xlvii, No. 39, September, 1932. United States Treasury Department, Washington.

The next session of the General Medical Council will open on Tuesday, November 22nd, when the president, Sir Norman Walker, M.D., will take the chair at 2 p.m. and give an address. The Council will continue to sit from day to day until the termination of its business.

Australia

[From our Correspondent in Sydney]

Among the newly appointed members of the New South Wales Legislative Council are Dr. H. R. R. Grieve of Sydney and Dr. A. E. Colvin of Orange, New South Wales.

Royal Prince Alfred Hospital

This year, 1932, is the jubilee of the Royal Prince Alfred Hospital, Sydney. The hospital owes its name to the visit of H.R.H. Prince Alfred, Duke of Edinburgh. In March, 1868, an attempt was made on his life in Sydney, and the hospital was erected as an expression of loyalty and a memorial of thanksgiving for the Prince's recovery. At a recent meeting of citizens, presided over by the Lord Mayor of Sydney, it was decided to launch an appeal for funds to assist the hospital out of its present sorry financial plight.

Association for the Advancement of Science

The twenty-first meeting of the Australian and New Zealand Association for the Advancement of Science was held at Sydney during the eight days from August 17th to August 24th. The president is Sir Hubert Murray, Lieutenant-Governor of the Territory of Papua. There was a very large attendance of scientists from all parts of Australia, Papua, and the mandated territory of New Guinea. Many problems of interest to medical practitioners were discussed. The Section of Medicine and National Health had for its president Dr. R. W. Cilento, chief medical officer of the Commonwealth Department of Health in Queensland, while the Section of Physiology and Experimental Biology was presided over by Dr. C. H. Kellaway, director of the Walter and Eliza Hall Institute at Melbourne Hospital. In his presidential address Dr. Cilento discussed the problems of the Australian Tropics. He pointed out that there was a larger population of white people in the tropical part of Australia than in any other tropical country. The residents there had shown that it was possible for white people to live, work, and multiply in the Tropics. In the early days of Australian colonization the development of the tropical parts of the continent by means of European labour was regarded as impossible. In the latter half of last century great numbers of native labourers from the Pacific islands were introduced into Queensland and the northern part of New South Wales. These natives brought with them malaria and other diseases. The death rate among Europeans in Queensland was higher than anywhere else in Australia, and the death rate among the native labourers was appalling. The termination of the ghastly experiment and the introduction of the "White Australia Policy" saved Queensland. The tropical parts of Queensland were now almost entirely free from malaria, and white men worked hard and thrived there. Filariasis and hookworm disease were endemic; the latter had been dealt with by sanitation and treatment on a large scale, and now appeared to be under control. There were still vast areas of North Queensland and the Northern Territory that remained virgin land. Dr. Cilento believed that Australia's paramount duty was the development of these areas by settlement with white people. Success would depend mainly on the application of suitable measures of public health. The evolution of racial resistance to leprosy was discussed by Dr. E. H. Molesworth. Professor Harvey Sutton, director of the School of Public Health and Tropical Medicine, read an interesting paper on the disappearance of leprosy from Great Britain. He read also a paper dealing with Australian physiological standards. He pointed out that, though a good deal of work had been done in the collection of information concerning the condition of healthy people in various parts of Australia, there had been little done in the way of correlation of the results of investigation. It was too often taken for granted that the healthy Australian conformed to the same physiological standards as people in other parts of the world. It had been shown that in some respects at any rate the Australian differed considerably from other white people. In a paper on the importance to public health of malocclusion and irregularity of the teeth, Mr. A. Thornton Taylor expressed his belief that the prevention of malocclusion with its attendant ills—caries and periodontoclasia—could best be effected by a reversion of the community to the rough tough diet of its forefathers. The handling, storage, and transport of foodstuffs were discussed by Dr. E. S. Morris of the New South Wales Department of Health and by Mr. W. Sinclair. Dr. Morris mentioned the importance of the pure-food laws in Australia, and pointed out that largely as a result of these laws Australians had become very fastidious in regard to the cleanliness and quality of their food. In many cases, however, the administration of the Pure Foods Act in New South Wales was hampered by the activities of the commercial chemist, who managed to keep one step ahead of the authorities. The use of chemicals in bleaching flour was prohibited, but the chemist had devised a method of bleaching by electricity. The public had become so accustomed to consuming beautifully white bread that the authorities had perforce allowed the practice to continue. The use of salicylic acid as a preservative was not permitted in New South Wales. Dr. Morris referred to the export of meat from Australia, remarking that it seemed likely that Australia would always be at a disadvantage in competition with other countries in the export of beef. Australian beef for export was frozen, Argentine beef was chilled. The thawing of frozen beef was accompanied by the loss of fluid and flavouring materials. This loss could be eliminated if the mass of beef was frozen instantaneously, but it had been found impracticable to treat large pieces in this manner. Others who contributed papers at the meeting were Sir Hubert Murray, Dr. T. Wi Repa, Mr. E. W. P. Chinnery, Dr. Raymond Firth, Professor S. H. Roberts, Dr. H. I. Hogbin, Professor J. Macdonald Holmes, Mr. F. E. Williams, Dr. W. M. Strong, and Dr. A. P. Elkin.

Scotland

University of Edinburgh

At the statutory half-yearly meeting of the General Council of the University of Edinburgh on October 28th, Principal Sir Thomas Holland, who presided, gave a review of the previous year's work in the university. He referred to a desire, expressed by the Students' Representative Council, that typewritten lecture notes should be provided for the use of students. His criticism was that such a practice might give grounds for the libel that university lectures sometimes consisted of a transference of notes from the lecturer's notebook to the student's without passing through the head of either. The introduction of this procedure might enable the universities of Scotland to carry on with one lecturer in each subject among them, together with one duplicating machine! He referred to the activities, largely initiated by the late Professor George Robertson at the Edinburgh Asylum, which had resulted in the establishment of two new chairs, that of child life and health and that of psychology. The inspiration which had led to the new chair in child life and health could, he said, be traced back to

impressions left by the late Dr. John Thomson. The department of psychology in Edinburgh had become the second largest university department of this subject in the Empire, and an important part of its activities was the special clinic which had been established at the mental hospital for the treatment of "difficult" children. He hoped that the work which would be done by the co-operation of Professors Drever, McNeil, and D. K. Henderson would open a new chapter in medical history. In Scotland at the present time there were nearly 20,000 persons, mostly maintained at the public expense, who were so ill mentally that they required special control. Yet they were a long way from being able to classify mental diseases with sufficient accuracy to apply curative and preventive measures in the way that had been made possible in physical ailments. Through the wisdom of the town council and the public spirit of Edinburgh citizens working in co-operation with the university, they now had an opportunity of advancing the study of mental diseases, a study which had been generally neglected through the assumption that mental diseases were largely outside the range of physical science. The Principal referred to two former students who had been recalled from positions elsewhere to fill chairs in the medical faculty during the past year: Professor A. M. Drennan in the subject of pathology, and Professor J. C. Brash in the chair of anatomy. With regard to the number of students, there was an increase on October 25th of 135 over the corresponding number on the same date last year, the chief increase—of 120 students—being in the faculty of medicine. There was a decrease of twenty-five in the total number of women students. In October, 1930, a system of free voluntary medical examination for students had been introduced, the object being to give training in suitable forms to the ordinary student as distinguished from the athlete.

University of Glasgow

At the October graduation of Glasgow University, Principal R. S. Rait conferred ninety-six degrees, of which eighty-five were in the faculty of medicine and eleven in the faculty of engineering. In his address at the close of the ceremony the Principal said that most of them were entering a profession which generations of mankind in all countries had united in regarding as the noblest of human pursuits. It was, however, no easy life upon which to enter, but they would obtain, as a reward of hardship, full and sincere gratitude for their efforts and sacrifices. He would give doctors two pieces of advice. First, they should not forget that the physician's body was itself mortal and not exempt from ills and dangers, and they must themselves obey the rules which they made for "keeping fit." The manner of dealing with patients had very real importance, for the physician who was himself well and happy by that very circumstance increased whatever chance of restored health his patient might have. Secondly, each doctor should find for himself some interest outside his daily work.

Forfarshire Medical Association

In his presidential address, entitled "Clinical judgement," to the annual meeting of the Forfarshire Medical Association last summer, Dr. W. E. Foggie, referring to the manner of examination of patients on admission to hospital, said that the physician or surgeon was presented with so much documented information—an elaborate account of the patient's history, reports from the biochemist, the *x*-ray department, electrocardiographer, etc.—that the original complaint was almost lost sight of. However valuable these reports might be, it was still necessary to consider them in the light of their bearing on the patient under observation, and it was the duty of the physician at the bedside to correlate them, and, if possible, to ascertain the correct nature of the disease. Whenever he found a particular method did not yield the result which his hypothesis of the patient's complaint suggested, Dr. Foggie said he did not question the validity of the report, but re-examined the patient to see if there had not been some mistake in his observation; if no new fact emerged he called for another report and considered the whole question afresh. He believed that an intensive study of the individual case in all its bearings, with revision of the diagnosis attained at various stages, and repetition of appropriate methods, was the most likely means of reaching a clinical judgement. What was required was not so much the natural history of a particular disease at a particular time, but a history of that disease throughout the ages. A study of medical history—that is, of the doctrines which dominated the practice of medicine from the earliest times—was needed. Medicine was now in a fluid state; as each new advance became evident textbooks had to be written afresh and current doctrines had to be restated in terms of the new knowledge. For a time the anatomo-clinical method as a working basis led to enormous advances; it had led to such diagnostic aids as percussion and auscultation. Advances in pathology and pathological physiology followed, and the rise of bacteriology, with its offspring serology, and the dominance of the science of biochemistry, had made the picture more complicated than ever. The great need of medicine was perspective. In literature the public were constantly being informed of some outstanding work which would prove a landmark, but in a year or even less it was all but forgotten. A little knowledge of the history of literature and a recollection of a few of the great novelists would at once convince anyone of the difference between the upstarts of the day and the great masters. The most perfect artist in perspective was Gibbon, whose history never deviated from the great original broad view and yet whose control of detail was marvellous. Not otherwise, said Dr. Foggie, should be our aim in medicine. Present-day clinical medicine brought the general physician and the specialist more and more into contact. The work of the one could often throw light on that of the other; each might have his own purely local piece of work to do, but the reactions of the general diseases and those apparently local were too great to be lost sight of for long.

Perth Royal Asylum

In the 105th annual report of James Murray's Royal Asylum, Perth, which covers the year ending March 31st, 1932, Dr. W. D. Chambers, the physician-superintendent, contrasts the therapeutical developments embodied in the asylum and its year-old offspring Gilgal Hospital. The latter, he states, is not adequately described as a "reception hospital," since it was designed with a rather more far-reaching purpose. During its first year twenty-six out of the fifty-eight patients admitted to it were discharged as "recovered" or "considerably improved," after being in-patients for periods ranging from four weeks to six months. At the end of the year eighteen patients remained under treatment, many having quite good prospects of doing equally well. The accommodation was arranged deliberately to provide reasonable amenities for the convalescent, as well as real hospital facilities for the more acute stages of mild mental illness. When graver conditions ensue, the patients are removed—in some cases temporarily—to the main hospital. Thus the asylum itself and Gilgal Hospital work in close co-ordination, and Gilgal Hospital is quite different from those subsidiary hospitals which approximate more to medical or surgical nursing homes. It has good bath and electrical equipment for the treatment of the physical disorders which account

for or underlie many mental illnesses. It provides occupational therapy as well as amenities for convalescent patients. In these ways it serves as a most valuable accessory to the parent institution, which continues to supply the special treatment necessary for the graver kinds of mental disorder. Dr. Chambers notes with regret a tendency on the part of medical practitioners and the laity to press the Royal Perth Asylum to admit without certificates patients who are manifestly unwilling and reluctant to co-operate in their own treatment. He has found that in such difficult cases the settling-down period is more rapid, and the subsequent progress more satisfactory, when the matter of their admission and duration of stay is taken out of the patient's hands, and determined by means of medical certificates and a sheriff's warrant. He continues to be most reluctant to allow to be certified locally any patient who has entered voluntarily, and who has become worse, or who has created a condition of danger by insisting on leaving too soon. In only one instance did this serious step prove unavoidable. A further local advance noted in the report is the establishment of a psychiatric and neuropathic out-patient clinic at the Royal Infirmary.

Stirling Infirmary Contributory Scheme

The directors of Stirling Royal Infirmary held a public meeting in the Albert Hall, Stirling, on October 25th, in connexion with the new contributory scheme which was outlined in these columns on September 17th. Provost Duff, who presided, explained that wage-earners were to contribute twopence per week to the infirmary, for which sum free hospital treatment would be available for the member, his wife, and children under 16. Colonel Dundas, Ochtertyre, president of the institution, in outlining the scheme, said that it did not apply to necessitous cases, which as before would be treated free in the institution. There were, however, many non-payers who had not joined this contributory scheme, and these would be asked to contribute what they found possible towards the cost of their maintenance, which at present amounted to 6s. 9d. daily.

England and Wales

The Prince of Wales at Worcester

Worcester, the site of the British Medical Association's pious pilgrimage on July 24th, was again *en fête* on October 28th, when the Prince of Wales visited it to open the reconstructed bridge and the recent extensions to the Worcester General Infirmary. These extensions and the building of the new nurses' home have cost £60,000 ; they include two operating theatres, an orthopaedic block, and a pathological laboratory. After the Prince had received cheques and purses towards the extension fund, it was announced that Sir William Morris, Bt., a native of Worcester, had decided to give £26,000, which will more than wipe out the deficit on the fund. In the course of a brief address His Royal Highness said that with the King's consent this institution, established in 1746, would henceforth be known as the Worcester Royal Infirmary.

Papworth Village Settlement

On October 28th the foundation-stone of the new Bernhard Baron Memorial Hospital at Papworth Village Tuberculosis Settlement, near Cambridge, was laid by Lady Baron. The ceremony was preceded by a luncheon party at which the Minister of Health, Sir Hilton Young, proposed a vote of thanks to the Bernhard Baron trustees, who have made a grant of £4,000 a year for five years to Papworth. He expressed warm appreciation of the pioneer work in the attack on tuberculosis at the settlement, and thanked the donors for their enlightened generosity, which would make this organization more perfect than before. Sir Humphry Rolleston, President of the Papworth Settlement, extended a welcome to Sir Louis and Lady Baron, and a vote of thanks to Lady Baron was moved by Sir Pendrill Varrier-Jones, the founder and medical director. The new hospital has been designed by Messrs. McMahon and Copsey, former patients, and will be erected and equipped mainly by Papworth settlers. When complete it will accommodate eighty-four patients, with an out-patient department for the use of the village as a whole.

St. Luke's Day Service at Portsmouth

The annual St. Luke's Day service was held at Portsmouth Cathedral on October 23rd, when there was a representative gathering of members of the medical and dental professions and nurses, in addition to members of the local branches of the voluntary aid detachments and of the St. John Ambulance Association. The doctors wore their academic gowns and the nurses were in uniform. The parade was organized by the local Division of the British Medical Association, and the lessons were read by Dr. A. E. Clark (chairman) and Dr. F. C. Gittings (honorary secretary). The Bishop of Portsmouth (Dr. E. Neville Lovett), who conducted the service, assisted by the Provost (the Very Rev. T. H. Masters), took his text from Chapter 13 of Hebrews. He said that man's responsibilities were not limited to the community to which he belonged, neither was his responsibility limited to physical and social welfare. It was the task of the medical profession to make life within the camp as long and painless as possible, and it was here that the medical profession and the ministers had their affinity: they were fellow-workers in the service of mankind. A collection for the medical charities produced over £9.

Central Midwives Board

At the October meeting of the Central Midwives Board for England and Wales a letter was read from Mrs. H. Leith Murray thanking the Board for its vote of condolence. Approval as lecturers was granted to Dr. A. L. Gunn, St. Leonard's Hospital, Shoreditch, and Dr. Wentworth Taylor, Dudley Road Hospital, Birmingham. The secretary reported that owing to ill-health Dr. W. H. Cheetham had resigned his appointment as one of the Board's examiners at the Leeds centre ; the best thanks of the Board were accorded to Dr. Cheetham for his valuable services. Correspondence was considered that had passed between the Standing Committee and the Nurses and Midwives Registration Board, New Zealand, with respect to the possibility of entering into reciprocal arrangements for the registration of midwives. It was resolved: that the suggestions of the New Zealand Board be not adopted ; and to inform that Board that the Central Midwives Board has no power to enrol midwives registered in New Zealand who have not passed the C.M.B. examination, unless reciprocal terms are granted in New Zealand to midwives registered in England. It was further resolved to continue the present practice whereby midwives who have undergone training in accordance with the regulations of the New Zealand Board, and who have passed that body's examination, are allowed to enter for examination in England without undergoing further training (subject, however, to the proviso that if they have not already had the district training required by the C.M.B. rules, they have to undergo it before enrolment), in the hope that a similar

concession will be granted by the New Zealand Board in the case of midwives holding the C.M.B. certificate after examination, who wish to register as midwives in New Zealand.

London Ambulance Service

A revised pamphlet giving particulars of the facilities afforded by the London Ambulance Service, together with details of the revised charges for the hire of the L.C.C. ambulances and ambulance-omnibuses (when not required for public purposes) by public authorities and private persons in cases of illness, has now been issued. Attention is drawn to the regulation that removals for private persons between addresses both of which are outside the administrative County of London cannot be undertaken, unless in circumstances of exceptional urgency. Additional copies of the pamphlet may be obtained by medical practitioners on application to the Officer-in-Charge, London Ambulance Service, Public Health Department, County Hall, S.E.1.

Ireland

Water Supply to a New Hospital

The findings of the committee appointed by the Limavady Board of Guardians to consider what action was necessary with regard to the demand of the Limavady Urban Council requiring the guardians to disconnect a two-inch water pipe supplying the new hospital, and to cease pumping within thirty days, were as follows. Having regard to the fact that the urban council assured the guardians of a reasonable supply of water, the guardians were justified in taking the steps which they did to secure such supply ; that the present consumption of water was less than when the old workhouse was in use ; that the existing two-inch pipe was the absolute property of the guardians, and the extension which was made to it was for the purpose of increasing the volume by decreasing frictional losses caused by a smaller diameter pipe ; that the permission granted to the urban council to lay their new main through the guardians' lands was on the express assurance that the water pressure to the institution would be improved, but this requirement had not been fulfilled ; that the present water supply was not sufficient to fill the existing storage tanks at night. The committee therefore recommended the guardians to revert to the arrangement that existed prior to the reconstruction of the new hospital—namely, two three-quarter-inch supply pipes from the existing two-inch pipe to the hospital, to withdraw the permission granted to the urban council to connect their new main to the guardians' pipe, and to require the council to disconnect the new main. The committee also recommended that the pumping operations be not discontinued until the council gave a proper supply, as failure of water in high-level tanks would result in a complete failure of the domestic supply installation, and might lead to serious damage to the central heating and steam boiler plant. The report and findings were unanimously adopted at a recent meeting of the board, and a notice of motion to rescind the resolution granting the urban council permission to lay a water main through the guardians' land was given. The board also received, from the Ministry of Home Affairs, a copy of the report of its general inspector consequent on his recent inspection of the institution. This report stated that the guardians and officials were carrying out their duties efficiently, that the conversion of part of the body of the house into an improved infirmary was practically complete, and patients were transferred to their new quarters.

Meath Hospital, Dublin

In his address at the opening meeting of the clinical session of the Meath Hospital, Dublin, Sir John William Moore recalled that on November 2nd, 1875, he, as a young physician just appointed a member of the staff of that hospital, delivered his maiden introductory address at a ceremony like the present. His subject then had been "The Medical History of the Meath Hospital." Fifty-seven years later he was asked by his colleagues to play a similar part. Referring to the responsibility of the clinical teacher, whether physician or surgeon, Sir John said it was his duty, as it was his privilege, to use his ripe experience in conveying to pupils a practical knowledge of disease ; but, in doing so, he must not forget the patient who was the subject of his bedside lesson. That patient must be spared all bodily fatigue or pain while he was being examined, and, more important still, there must not fall from the teacher's lips a single word which might hurt the patient's feelings or cause him mental anguish far worse than bodily pain. The relation of the medical practitioner to the State was a topic well worthy of consideration. It had assumed greater significance since public health or preventive medicine had attained its present importance under the name of "State medicine." The career of a duly qualified medical practitioner as a medical officer of health was still far from being assured, but the time was coming when that career would be looked on as one of the most beneficent, and therefore one of the noblest, callings. He often wondered whether they, as members of the medical profession, ever paused to consider, or attempted to realize, the outstanding responsibility which attached to the practice of medicine. Its dignity as a profession, and the spiritual rewards which awaited those who devoted all their powers to the conscientious discharge of their duties, afforded food for earnest thought, even for much searching of heart. No other calling—the Church not excepted—demanded so much self-denial, patience, and prayer. In conclusion, Sir John said that while the labourer was worthy of his hire, the most lasting rewards of duty well done in the practice of the medical profession were not material only, but spiritual. The full meaning of that word he left to one and all of them to grasp, and to make the keynote of their professional life and conduct.

CORRESPONDENCE

Royal Medical Benevolent Fund

SIR,—May I ask once again for the kind hospitality of your columns on behalf of the Royal Medical Benevolent Fund. We have for several years past given a Christmas gift to all our annuitants and to the poorest of the grantees, and in order to accomplish this we have been compelled to ask for the assistance of our brethren in the medical profession. This is the special object for which I desire to secure your approval and support. We hope with the help of our sympathizers to allot 30s. each to these poor folks.

In these hard times old and infirm doctors, widows and children of deceased doctors, are often hard pressed even for the bare necessities of food, clothing, and fuel. Anything that is given to us for this object will be a real boon.

Donations may be sent to the honorary treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1.—I am, etc.,

THOS. BARLOW,
President of the Royal Medical Benevolent Fund.

London, W., Nov. 1st.

Acute Osteomyelitis in Children

SIR,—Mr. Cecil Wakeley's review of this difficult subject (October 22nd, p. 752) is characterized by so much evidence of sound practical knowledge and of fair consideration having been given to every method of treatment that it may seem ungracious to offer any comment which might be regarded as criticism, but there are one or two points in his paper on which I venture to make certain observations based on my own personal experience.

Mr. Wakeley states that in early cases extensive operations are not necessary, but that the bone should always be drilled and drainage established. With this most people who have had to deal with the average type of case met with in this country will agree. That diaphysectomy is the only satisfactory method of dealing with extensive infection in a long bone is, I think, true ; and I feel that one of the reasons why so much is said to the contrary is the assumption, too often and too readily made, that cases of extensive infection do well after drainage operations. Some do well after repeated sequestrectomies, many end in amputation, and others which do well for a time flare up often several years after they have to all appearance healed soundly.

Mr. Wakeley talks of "diaphysectomy followed by a bone graft." It must be admitted that failure of regeneration after subperiosteal resection of a long bone in a child may occur, but this is extremely rare if correct after-treatment be adopted—namely, careful extension of the limb and early muscular contraction, which has a marked effect on the reproduction of bone. Partial diaphysectomy in the tibia is not satisfactory. It is usually better to remove the whole shaft if complete resection of any part of it is considered necessary, but I do not think this applies to the femur. Infection does not tend to spread along the whole shaft of the femur so often as it does in the tibia, and it is not uncommon to have the lower third of the bone involved to such an extent that any drainage operation will not be likely to effect a real cure while the upper part of the bone remains healthy. At a meeting of the British Orthopaedic Association held here last year I showed two cases in which the lower end of the femur had been resected over ten years ago. In neither case has there been any local recurrence of infection, nor is there any shortening—a marked contrast to some of the late results after more conservative operations. Extension can be maintained in the femur, tibia, or humerus by a Thomas's splint. In the femur and humerus traction is got by the ordinary method of fixing adhesive plaster to the lower part of the limb. In the tibia I have found a thin os calcis pin most satisfactory. —I am, etc.,

Aberdeen, Oct. 23rd. ALEX MITCHELL.

Treatment of Osteomyelitis

SIR,—The practice of Winnett Orr, as described by Mr. Paul Bernard Roth, in sending osteomyelitis cases home because the intolerable stink from them, when treated by his method, makes it impossible to keep them in an airy ward, or even on a ward balcony, may suit homes in the wide and open spaces, but is impossible, and should not be taught in this country with its slum, and often verminous, houses, from which many of the cases of osteomyelitis are sent to hospital.

I think it therefore opportune to draw attention to a preparation of paraffin, spirit, and flavine, which may be used as a substitute for vaseline in cases of osteomyelitis, mastoid disease, burns, and indeed any septic case in which a prepared gauze packing can be applied with benefit. The form in which I presently use the preparation is: soft white paraffin, 1 part ; rectified spirit, 25 per cent. ; flavine, 1 in 1,000. The spirit is well rubbed into the paraffin. Each constituent has a definite action in inhibiting the activity of the infecting organism, and, in addition, the growth of epithelium seems to be stimulated by the preparation.

To discuss its action only in relation to osteomyelitis. After the bone has been guttered, or in great part removed, and the wound has been packed with the P.F.S. smeared on gauze and the plaster applied, it has been found unnecessary to change the dressing more often than once a fortnight, and even then the odour is, in many cases, hardly noticeable to the patients in the adjoining beds in a ward. It entails little work to re-dress these cases at intervals of two or three weeks ; and to see the progress of bone growth and be able to remove early forming sequestra is a great advantage. The case is under proper control in the right place, and a method of treatment which seems a definite advance on the old frequent dressings is less likely to fall into disrepute. The preparation has proved valuable and is worth a trial.

May I, in conclusion, ask the wits of the profession—perhaps I should say the nit-wits—to refrain from attaching my name to the preparation, for a reason known to most.—I am, etc.,

Glasgow, Oct. 30th. WILLIAM RANKIN.

Maternal Morbidity

SIR,—Dr. Kathleen Vaughan, writing in the *Journal* of October 22nd (p. 775) on maternal morbidity, asks a very pertinent question, What is wrong with a perfectly natural process that has turned into a disease? She enumerates three things which, she holds, really cause difficult childbirth: (1) the shape of the pelvic rim, now oval but normally round, to fit the child's head ; (2) rigidity of pelvic joints ; and (3) wrong position for delivery. Under (3) Dr. Vaughan says:

"Until the quarrel between doctors and midwives in mediaeval times no woman was ever confined on her back; nor is she now in Asia, Africa, New Zealand, or *among country people remote from help in the British Isles, such as Northern Scotland*. Women in the above places . . . manage things for themselves in the primitive posture, which is kneeling, crouching, or squatting." (The italics are mine.)

I have practised in the Northern Highlands of Scotland for forty-five years, and have in the course of my duties attended a large number of confinements, both normal and abnormal. I have, however, never seen the primitive posture adopted, unless in precipitate labour, where the woman probably had no time to lie down and possibly no convenient place on which to lie. I agree with Dr. Vaughan that the primitive posture as described by her may make delivery easier, just as it helps the act of defaecation, but I cannot agree that any other position which a parturient woman may adopt in her suffering must of necessity be a "wrong position." Surely, to a woman tired out with the nagging first-stage pains, a lateral position with the knees drawn up gives her welcome relief and a chance of a little snooze between the strong pains of the second stage. Why that should be a "wrong position for delivery" I cannot understand.

Dr. Vaughan says that our country people in the North of Scotland are "remote from help." I disagree entirely. If Dr. Vaughan knew how well served our people are she would not make such statements. Remote we may be geographically (sometimes even that is not a disadvantage), but we are not so primitive as Dr. Vaughan would like us to be. In the Highlands of Scotland outside the towns a medical officer is appointed for each outlying district, and is responsible to the Department of Health for Scotland under the Highlands

and Islands Medical Service Scheme. These practitioners are carefully selected and capable men, who render most efficient service. We also have in the various counties a nursing service staffed mostly by Queen's nurses specially trained for district work. Both doctors and nurses use motors, and despite long distances and difficult roads patients can be reached with comparatively small loss of time. Emergencies are taken by ambulance to the nearest hospital. There is a chain of hospitals from Fort William through Inverness to Wick and the Orkneys and Shetlands offering skilled surgical services. Therefore I claim that our people up here are not "remote from help."

Women in the Highlands are, as a rule, healthy and well built, and pelvic deformities are rare. Persistent occipito-posterior presentations in primiparae are really troublesome complications, and cause anxiety to both doctor and nurse in country practice, even in L.O.A. positions of the vertex. Muscular young primiparae frequently require instrumental help, which I believe renders delivery safer than it would be if such help was withheld, because with a woman lying on her left side good control of the foetal head can be obtained and perineal tears prevented in all but a small minority of cases. In instrumental deliveries an anaesthetic is essential, unless specially contraindicated. Chloroform is the most useful. It is easily carried, and administered with care seldom gives any trouble. Gas is impossible in country midwifery, and ether is unsafe owing to open fires.

Our results in maternity work in the North of Scotland are good. I cannot here give figures, but I am sure that my colleagues in the Highlands will agree with me that, although almost all our patients are delivered lying on the left side, and therefore, according to Dr. Vaughan, in the "wrong position for delivery," our "end-results" are satisfactory. Dr. Vaughan's suggestions are very ingenious, but I do not believe that her three points explain everything.—I am, etc.,

JAMES B. SIMPSON, M.D., F.R.C.P.Ed.

Golspie, Sutherland, Oct. 24th.

SIR,—Dr. Vaughan is to be congratulated on drawing attention to the fact that we have strayed far from nature with regard to position in delivery.

In many instances I have found that country-bred women who, on lying down in the conventional horizontal position, lose their pains either partially or completely, regain them with increased vigour if allowed to assume the semi-squatting posture which nature dictates to them. A pillow placed between the thighs helps to support the perineum and receives the head. Thus we obtain in those cases: (1) shorter second stage, (2) a normal (non-forceps) delivery, and (3) shorter third stage—all of which tend to reduce the incidence of maternal morbidity.

Control of the descent of the head is stated to be difficult or impossible in this position. This is not correct; and in any case, who desires to control the normal descent of a normal head? It is the non-descent of the head which causes the impatient to rush in with forceps, thus adding to the risks of labour. By adopting the semi-squatting position we find again the friend we have lost in the horizontal positions—the force of gravity. Truly, "God made man upright, but they have sought out many inventions."—I am, etc.,

Edinburgh, Oct. 24th. THOMAS J. STEVEN.

SIR,—The letter by Dr. Kathleen Vaughan which appeared in the *British Medical Journal* of October 22nd is of such extreme importance that I am not surprised at the absence of reference to it in your correspondence columns this week. But I welcome this, inasmuch as it gives one whose only experience of maternity work was in far-off days of general practice, an opportunity to say something on the subject.

Whilst agreeing with every word employed by Dr. Vaughan down to her last paragraph, I cannot admit that her three points—valuable as they are—explain *everything* in this matter. The *psychological* attitude of the mother has, to the mind of some of us, an importance hardly less (if indeed less) than the *physical* attitude. And the present psychological attitude of so many expectant and actually parturient mothers is one for which the absence of psychological insight amongst obstetricians is largely responsible. About this more will be heard next week, when Dr. Fairbairn is to open a discussion at the Medical Society of Individual Psychology.

But in respect to the physical factors involved I think there is something more to be said. No one has a greater appreciation of Dr. Vaughan's most important work than I, and I was glad to make some acknowledgement of it in the last edition of *The Mongol in our Midst* on page 257. But I venture to make the point that disharmony between the maternal pelvis and the foetal head is *sometimes* (at least in countries such as ours, where racial origins are so confused) due to conflict between "paternal" and "maternal" strains: (*a*) in the mother; (*b*) in the foetus; and (*c*) sometimes in both. Leaving disputed questions of anthropology and ethnology on one side, we must acknowledge that human beings can roughly be divided into long-headed and short-headed types, and that there are pelvic forms corresponding to these. So if a mother who, like so many charming girls, although English, is yet slightly mongoloid with a round head and a round pelvis, tries to give birth to the long-headed son of a Scottish and dolichocephalic father, difficulty will occur. The difficulties will be accentuated if she herself, although mongoloid, is morphologically a confusion-product between the orangoid and chimpanzoid types of humanity, and the whole thing may be much worse if the same is to be said of the father.

That notions of this kind are not merely idle speculations has been lately shown, I think convincingly. In earlier editions of the book just mentioned (1924–5) I drew attention to the two chief types of humanity, regarded from the point of view of skull, spine, pelvis, and hip-joint, pointing out that "congenital dislocation of the hip" represents an indecision of the foetus in respect of two lines of development offered it, by reason of discrepancy between the ancestral or parental versions of the lesson to be recapitulated. Since I wrote this the work of Mjöen and Bryn (1926) has shown clearly that "degeneration"—mental and physical—and also congenital dislocation of the hip, in Finmark and elsewhere, are definitely connected with crossings between mongoloid Lapps and the "Nordic" Norwegians (loc. cit., 1931, pp. 363, 412, etc.).

In other words, the explanation which I postulated for the occurrence of this deformity in Brittany, in the frequency shown by Le Damany, has been demonstrated to be valid in Finmark. This demonstration carries with it implied justification for the explanation of disharmony between the foetal head and maternal pelvis, as due to conflict, confusion, and muddling between ancestral and parental morphological types, of the kind that lies behind the production of imbecile mongoloids and many deformities and deficiencies.

I am sure Dr. Vaughan is on the right track, and hope she will continue her researches.—I am, etc.,

London, W.1, Oct. 29th. F. G. CROOKSHANK.

Precision in Radium Therapy

SIR,—While agreeing with the main argument of your annotation in the *Journal* of October 1st, headed "Precision in Radium Therapy," I ask your indulgence to express the views of a practical worker with radium. There seems to be a misconception regarding radium, and an attempt is being made to place it in a situation occupied by no other medicament. Your remark that "Radium therapy is still almost entirely empirical" is in agreement with the opinion expressed in an editorial in the September issue of the *British Journal of Radiology*. The word "empirical" has two meanings: one is "quackery," and the other "dependence upon experience." The first I think I can dismiss, the second *you* wish to dismiss, and here we disagree, and a clear definition of views seems necessary.

The physicist attempts to replace empirical methods by drawing up tables which show the volume of radium to be used and the methods of application to any tumour, so that treatment by radium should be scientifically accurate. This can never be done. Possibly, recognition of the amount of science expended in the separation and preparation of radium has inspired workers to carry on the strictly scientific work to its logical conclusion—that is to say, to its use—and to a certain extent they have carried scientifically minded specialists some way with them. But medicine is all empirical and always will be. Does the doctor weigh the baby to calculate the exact size of the dose of castor oil needed to titillate the precise number of villi or stimulate the correct number of Lieberkuhn's glands, or does he order the dose which he empirically knows to be sufficient? And is the result satisfactory? For it is the patient's interest and not that of science that medicine serves.

Consider the factors already mentioned—the volume of radium, its method of application, and the extent of the tumour—and see if a scientific conclusion can be arrived at. The volume and amount of radium are easy to ascertain, and here we owe a great debt to the physicist; but when we come to its range and action the conclusions drawn by the physicist differ widely from those of the clinician. Tables may be drawn up, curves may be plotted and charts made, the whole weight of higher mathematics may be invoked; but this has had little practical bearing on the clinician's work, and we must admit that the advances in treatment so far have come from the clinician. Most of these calculations refer to the dose given off. What is needed is knowledge of the dose received by the carcinomatous cell, and our attempts to give that dose, in my opinion, must always be empirical, as it depends upon what distance from the cell the focus of radium is. No one can know the exact outline even of a simple encapsuled tumour, and how much more uncertain is the outline of a malignant one which is infiltrating the tissues and has no perceptible margin! How then can the dose be scientifically arrived at?

The difficulties of inserting needles parallel to each other by the most careful operator are evident if an *x*-ray photograph is taken subsequent to their insertion. No method approaches accuracy, except the one introduced by myself—namely, the insertion of needles by skewers—and this is only suitable to special occasions. What is the use, therefore, of deceiving ourselves as to our ability to place the radium needles accurately, even if we knew where their exact position should be? In many cases the size of the tumour to be destroyed can only be guessed. For these reasons it seems to me that the work of the scientist pales before that of the clinician, and the more empirical he is—that is to say, the more his experience has taught him—the better.

The physicist also attempts to better our dosage, and we are all aware that our nomenclature for dosage is unscientific, for an interstitial milligram hour is not the same as a surface radiation milligram hour, but we understand and can easily convey this without confusion. We should welcome a more accurate nomenclature, but if it is to be useful it must be simple enough to be understood by those not so well versed in the higher mathematics as are the physicists, and enthusiasm in this direction will merely defeat its own aims.

Science, and also medicine, owe a great debt to workers like J. Murdoch, Sievert, and W. V. Mayneord, and to Souttar, who has done his best to translate their work into language more or less intelligible to the ordinary person, but I cannot help thinking that they have a very indirect influence on the practical clinician. Permit me to quote one sentence from W. V. Mayneord, as his is the last paper I have studied:

"The intensity required may evidently be expressed in terms of the difference of the two integrals—that is:

$$I = \rho/c \left[\int_0^{\theta_1} e^{-\mu a/\cos\theta} \, d\theta - \int_0^{\theta_2} e^{-\mu a/\cos\theta} \, d \right]$$

where θ_1 and θ_2 are the values of θ corresponding to the ends of the radium. . . . These tables have been used to calculate the intensities in the region A. . . . The calculations are not very laborious, though still somewhat lengthy when the intensity at a large number of points is required."

I apologize for taking it out of its context; it is not done in an endeavour to make it look absurd, as I am the last to despise the work of the scientist. I have little doubt that the action of castor oil could be depicted just as graphically, but if even the most specialized clinician is not going to find the calculation "very laborious" then I know nothing of the clinician. Close co-operation between the clinician and physicist is all to the good, but at the present time we are drifting apart. We must also remember that the very factors accepted to-day upon which many of the physicist's conclusions are based, may no longer be factors in the near future, and that the excellent and interesting work of Dr. Pullinger, the pathologist at Mount Vernon Hospital, has called in question the hitherto supposed importance of the action of radium on the cell itself.

Empiric radiation will remain in its application, as do all other forms of treatment in our profession, and we may as well admit that the pure scientist and the mathematician is not of us, and can only influence but not direct us. The human factor in the clinician, and more so in the patient, must stand altogether apart from science, and it is no use our hankering after it; we should be proud of the height to which we can lift our purely empirical craft.—I am, etc.,

DUNCAN C. L. FITZWILLIAMS.

London, W.1, Oct. 28th.

Research in Mental Illness

SIR,—Dr. R. G. Gordon and Dr. C. Davies-Jones have carried the question of psycho-pathological research a step further by inquiring into the reasons for its present neglect in the mental hospital service. Might I suggest that they are too hopeful that time and circumstances will effect any change in this state of affairs. In my opinion there is a virtual ban on psychology in official circles, and I think this springs from the following causes:

1. Medical education is no preparation for the employment of (*a*) highly abstract notions, and (*b*) tentative theories. Consequently medical men, as a rule, are either repelled by the difficulties and uncertainties of psychological research, or

—embracing this interest—are over-confident of the reality and validity of their formulae. They readily reify their abstractions and elevate them into articles of faith.

2. Hospital practice tends to obscure the personal factor in disease and treatment. Patients are considered as illustrative cases of various forms and phases of definite disease-entities. Their personal situations and feelings are passed over from hurry and habit, and they are regarded as machines with a definite defect to be discovered and corrected. This method works admirably, for example, in ophthalmology or dentistry, but not at all in mental disease.

3. Objective diagnosis, and direct, decisive interference (as in operative surgery) become the all-pervading ideal of medical training, and establish a craving for definite categories of facts which can be learnt at once and for all and reproduced in examinations. Uncertainty is anathema to the student. An error that has to be unlearnt he feels as a personal grievance. Yet the psychologist must work in a world of doubt and changing conceptions.

4. The graduate recruit to the mental hospital service is (partly) trained in pathology and not at all in psychology. The conditions of his service do not permit of the wide study and reflection necessary to rectify this omission. Ethnology and biology have become essential to research in mental disease.

5. The tradition and "public opinion" of the mental hospital service is actually hostile to psychology, and this to such an extent as to prejudice the professional prospects of any medical officer who pursues this in preference to the pathological line of approach. Some posts are open to pathologists only. Pathological qualifications and interests are demanded of candidates for certain senior appointments. In applications for promotion testimonials will reflect the prevalent bias of opinion in favour of the pathological interest, while diplomas in psychological medicine demand a closer acquaintance with the intestinal flora than with the elementary facts of social and pathological behaviour.

The lack of appreciation of the psychological line of approach is very apparent in the proceedings of the Royal Medico-Psychological Association. At the quarterly meeting, on May 19th, Dr. Edwin Goodall put forward a plea for an intensification of pathological research into the causal factors of dementia praecox. He pointed out that the *exciting* cause of schizophrenia *may* be infection, and demanded extensive facilities and, presumably, endowed research with a view to following up this hypothesis.

No one has so far dared to advance such a claim for psychological research, although it is by comparison utterly neglected, and, by reason of the extent and obscurity of its data, requires at least as intensive work as the pathological line of approach. In treatment the psychological factor is also neglected. No less enlightened a man than the late Dr. Lord, who did so much for mental hygiene and research, wrote a brochure on the mental hospitals and the public. Among other things, this expressed satisfaction that on visiting days certain wards were crowded with patients' relatives, and that these (generous ?) facilities for domestic and social intercourse could be supplemented by messages sent by the social worker! Incidentally he appeared to be content that the latter functionary should undertake the investigation of the patient's domestic life and circumstances. From a psychological point of view this complacency defies comment.

After all, the data of psychiatry are the clinical phenomena, the behaviour of patients, and chiefly their social and domestic reactions. Do the pathologists not lay aside all this data in despair, and accept instead the patient's excreta, etc., as the proper subject of their study? Have we really exhausted the patient as a source of information that we can afford to discard him as altogether irrelevant to the further progress of our scientific opinions?—I am, etc.,

London, W.C.1, Oct. 29th. IAN D. SUTTIE.

Aluminium and Health

SIR,—With reference to Dr. Eric Pritchard's letter in the *Journal* of October 29th, may I suggest that he publishes a detailed account of the evidence provided by the babies and the dog to which he refers.—I am, etc.,

Harrow, Oct. 29th. J. H. BURN.

Blood Transfusion

SIR,—In the recent correspondence on blood transfusion in your columns stress has rightly been laid on the quality of the needle, and particularly on its sharpness. No mention has been made, however, of one small but very useful modification of the usual needle. In most of the standard blood-transfusion needles the rubber tubing has to be fitted directly on to the needle. I have found it better to have the tubing connected instead to a separate bulb end with a metal cone that fits into the actual needle. The advantages of this arrangement are that the needle proper can be introduced into the vein and its arrival into the vein lumen at once detected, that the connecting of the rubber tubing can then be effected without any danger of disturbance of the needle, and finally that, should any stoppage of blood flow occur, the point of stoppage can be at once detected by disconnecting at the point of junction. I have no doubt that many of your correspondents are in the habit of using a similar metal cone connexion, but I have found this small technical point of such value that I think it is worthy of direct mention.—I am, etc.,

London, W.1, Oct. 29th. DAVID PATEY.

Chloroform Capsules in Childbirth

SIR,—In your issue of July 30th mention was made of the fact that a supply of chloroform capsules, as described by Mr. L. C. Rivett, in his paper read before the Royal Society of Medicine on June 17th, could be obtained free of charge for experimental purposes by all hospitals for a period of three months, upon application to the Secretary, National Birthday Trust Fund, Empire House, 175, Piccadilly, W.1. I am glad to say that seventy-three hospitals have availed themselves of the offer, and tests are accordingly being made on a wide scale. The results so far reported have been uniformly satisfactory.

It is now desired by the National Birthday Trust Fund to extend the offer to all medical practitioners for a further two months. Two boxes of twelve capsules will be supplied free to any registered medical practitioner for experimental use, in return for full reports, forms for which will be enclosed, and a further supply can be obtained at cost price, or free if required for use in genuinely necessitous cases. It will be exceedingly kind if you will assist in bringing this offer to the notice of your readers. It is especially hoped that medical officers of health will make a trial of these capsules.

It is also desired to make clear that within the three months' period from the first application repeat orders from those hospitals which have already received a supply are welcomed. Although the majority of hospitals have applied for considerable quantities, and have repeated their orders, a certain number have asked for only one box—scarcely a sufficient quantity for an adequate test.

As already pointed out in your columns, the reports, when received, will be submitted for examination and report to a medical committee, of which Dr. J. S. Fairbairn, President of the College of Obstetricians and Gynaecologists, is chairman.—I am, etc.,

JULIEN CAHN,
Chairman, National Birthday Trust Fund.

London, W., Oct. 31st.

Fractures of the Mandible

SIR,—Referring to your report of the meeting of the Medical Society of London, at which fractures of the mandible were discussed, it would be interesting to know what is the best method of procedure in these cases, tabulated thus:

1. Immediate treatment of the tooth-bearing area and behind it—(*a*) with teeth, (*b*) without teeth.
2. Later treatment.

Fortunately I have only had to deal with fractures of the tooth-bearing area in patients with teeth, and I have (following Sir Frank Colyer's teaching) extracted the tooth at each side of the line of fracture. This I have always considered a *sine qua non*. Then has followed the reduction of the displacement, and keeping this in position by means of wire or salmon-gut sutures round the occluded teeth. I admit that cap splints are better, but they take time to make, and are not always forthcoming, and in any case they come under "Later treatment."

Is it always advisable or essential to give an anaesthetic? Surely, in this enlightened age, skiagraphs should never be omitted? It is a subject that has received scant attention, for quite recently I saw a patient—a young man with complete teeth, his mouth open, dribbling saliva, and who was in acute pain and discomfort—who had been sent home from a general hospital, where the only treatment he had received was a bandage to support his chin. I told him to report at the end of a week.—I am, etc.,

WRIGHT LAMBERT, M.R.C.S., L.D.S.

Brentwood, Essex, Oct. 30th.

Rheumatic Fever and the Tropics

SIR,—In the *Journal* of October 22nd Professor T. A. Hughes writes that rheumatic fever occurs in the subtropical part of India; but the important part of his letter is at the end, where he points out that the majority of his patients "come from villages where there are no sewers of any description, sanitation being of the most primitive type."

Professor Hughes's letter does not affect the facts that I have set forth. I observed as far back as 1896 that rheumatic fever was so seldom met with or diagnosed in the Tropics that it is doubtful if the true disease ever occurred in those regions. I found later that the common rat flea of temperate climates, *Ceratophyllus fasciatus*, was not to be found in the Tropics. From this flea I was led to the brown rat, *Rattus norvegicus*, which also is not a natural denizen of the Tropics, and from the rat to the broken drain. This flea, this rat, and a broken drain are commonly found in association with the environments of rheumatic fever in temperate climates, though in some places, such as Northern India, the flea, *Ceratophyllus fasciatus*, may be replaced by a *Ceratophyllus* such as *punjabensis*—a species of a closely allied group. In this connexion it must be remembered that more than one species of anopheline can carry malaria.

The broken drain is not an essential part of my hypothesis, as cases of rheumatic fever occur in agricultural districts of England where there are cess-pits only and no drains. I have been trying, however, to connect up the disease with a certain kind of insanitary condition, and in this the statements in Professor Hughes's letter give me support. But what I have tried to uphold more than anything is that the one important environment of rheumatic fever is that of temperate climate, and that this, with the great difference in the geographical distribution of the disease, which cannot be due solely to temperature or humidity, should give a clue the following up of which ought to show the cause of the disease.—I am, etc.,

Harrow, Oct. 29th. J. TERTIUS CLARKE.

Erythromelalgia

A Request

SIR,—I desire for purposes of investigation a few patients displaying severe burning pain in the feet, accompanied by redness of the skin and aggravated by warmth and the dependent position; and should be grateful for the name and address of any such patient who would be willing to attend my out-patient department at University College Hospital.—I am, etc.,

Department of Clinical Research, University Hospital Medical School, W.C.1. October 26th. THOMAS LEWIS.

Obituary

A. FREELAND FERGUS, M.D., LL.D.

F.R.F.P.S.GLAS., F.R.S.ED.

Consulting Surgeon, Glasgow Eye Infirmary

There passed away on October 24th, rather suddenly at his home in Rothesay, Andrew Freeland Fergus, formerly President of the Royal Faculty of Physicians and Surgeons of Glasgow, and of the Royal Philosophical Society of Glasgow, with which he had a long and honoured connexion. Early in his career he chose ophthalmology as his life-work, studied at Utrecht and Paris, and finally settled in Glasgow, where he was appointed surgeon on the staff of the Glasgow Eye Infirmary. During his time he wrote many papers on various subjects, connected with ophthalmology and unconnected with it, published a book on elementary ophthalmic optics, and devised several original operations.

He was born in Glasgow in 1858, where his father, Andrew Fergus, M.D., was in practice. He graduated M.B., C.M. in 1881, and proceeded M.D. ten years later. In 1884 he was elected F.R.F.P.S., and in 1921 his university conferred on him the honorary degree of LL.D. For some years he was professor of ophthalmology in Anderson's College, and consulting ophthalmic surgeon for the Corporation of Glasgow. During the European war he was a member of the staff of the Fourth Scottish General Hospital, with the rank of major R.A.M.C.(T.), and was mentioned for services rendered. When the British Medical Association met at Glasgow in 1888 he was honorary secretary of the Section of Ophthalmology, and at the Annual Meeting at Swansea in 1903 he was vice-president of the same Section. He represented the Glasgow and West of Scotland Branch on the Council of the Association from 1898 to 1903, and he served on the Arrangements Committee for the Annual Meeting at Glasgow in 1922.

Fergus introduced the use of the refraction ophthalmoscope and Snellen's metrical distance test types in the Glasgow Eye Infirmary, where previously types arranged for feet measurement had been in use, the sterilizing of instruments and dressings, the culture of conjunctival and lachrymal sac secretions prior to operation for cataract, and other operations for general investigation. His operations for ptosis and hypertrophic conjunctivitis are original, and he was probably the first in Scotland to remove the lachrymal sac. His advocacy of advancement *versus* tenotomy as a primary operation for squint came early in his career, and this he learnt from Landolt, and was strong in his opinions in the matter. Two other operations were original—one that of making a groove in cases of contracted socket, and the other a trephine modification of the Lagrange operation for glaucoma.

A colleague writes: Fergus was a born teacher, both in the classroom and in the clinic. He had large classes, great enthusiasm in his work, and patience with students,

but did not suffer fools gladly. His deep voice and hearty laugh could be heard all over the clinic at the Eye Infirmary. He was a loyal friend, generous to a fault, straight and upright in his dealings, but a determined opponent of all he thought wrong, conservative by nature but ever open to consider new ideas, strong in his opinions and ready to uphold them. He had a remarkable memory, and never seemed to forget a face or a name; as one remarked, "Fergus appears to think with both sides of his brain at the same time." He appeared to be able to follow two lines of thought at one and the same time. He had many sides to his nature, and was interested in art, music, botany, biology, and navigation. Above all, he was a deeply religious man in the true sense of the word "religion." A very lovable man to those who knew him intimately.

J. H. TAYLOR, M.A.Camb., M.B.Vict.

Late Physician, Pendleton Branch, Salford Royal Hospital

Dr. James Henry Taylor, who died on October 11th in his 76th year, was the son of George Henry Taylor of Salford. He was educated at the Manchester Grammar School, and thence proceeded with a classical exhibition to St. John's College, Cambridge. In 1880 he took his B.A. in the classical tripos. He was then for some time classical master at Ashville College, Harrogate, a Methodist foundation. His mind turning to medicine he entered Owens College, Manchester, and continued his prize-taking career, graduating in 1892 M.B., Ch.B., with first-class honours. He practised in Salford, and rapidly gained the respect and confidence of patients. With his early classical training, his successful academical career, his teaching experience, and his great natural abilities, he was undoubtedly a "man of parts." He soon became an outstanding figure in the local medical world. A clear thinker and first-rate speaker, his opinions were much respected by his colleagues, and it was an unusual pleasure to meet him in consultation. Of average height and active build, he had clear-cut features, and his habit of wearing closely fitting spectacles always suggested the keen reader, book-lover, and student. He formed definite views on subjects which interested him, contending hard for anything he advocated.

For many years Taylor took an active part in medical politics, and was secretary of the Salford Branch of the British Medical Association. He was a member of the Council between 1909 and 1912, and served as a representative for five years. On two occasions, at the Annual Meetings in London and Liverpool, he was secretary of the Section of Medical Sociology. When the National Health Insurance Bill was before the House of Commons he naturally took a keen interest in it, and after it became law wrote, in 1912, along with A. S. Comyns Carr and W. H. Garnett, barristers, a book on *National Insurance*. A preface to it was written by Mr. Lloyd George, which received special notice in these columns on February 10th, 1912. The book itself was reviewed in the following number of the *Journal*. In preparing it Taylor had several interviews with Mr. Lloyd George, who recommended the book, in his preface, as an attempt to anticipate and elucidate the difficulties which seemed to bristle in the clauses of the Act. It was a carefully compiled and successful attempt to clear up and interpret those difficulties which Mr. Lloyd George acknowledged to exist. There was such a demand for the work that a second edition was called for in two or three months, and opportunity was taken in this to make some necessary emendations. Taylor naturally took part in the local discussions on the Act, and joined in the movement which secured for Manchester and Salford the right to treat for remuneration on the "per attendance" basis, and not *per capita*, as in other towns. Later he became more reconciled to the Act, for he thought a measure of its nature inevitable. In recent years he did less practice, and served on the Ministry of Pensions medical boards; and he also took sessions as part-time referee under the Ministry of Health until within a week of his death.

He was at one time a well-known member of the Rucksack Club, and took part as leader, or with others, in making the first ascent of difficult rock climbs in the Lake District. A very stiff part of the celebrated north-west climb on the Pillar Rock, which he was the first to get up, is still known as "Taylor's Chimney." The Alps, too, were a favourite resort. As late as 1921, when 11,000 feet up on Mont Blanc, he had his head cut badly by a falling stone; next year he climbed the Matterhorn. He also took part in exploring and mapping out the caverns, pits, and underground passages in the limestone districts of Derbyshire and Ingleborough.

The death is reported of Dr. J. Middlemass Hunt in his seventy-fifth year. He was born at Perth, received his medical education at Glasgow and Vienna, and graduated M.B., C.M.Glas., with commendation, in 1881. He specialized in laryngology, and from 1886 to 1914 held the office of surgeon to the throat and ear department of the Liverpool Royal Infirmary, and was for some years assistant lecturer in laryngology in the University of Liverpool. He had held office as secretary, vice-president, and president of the Section of Laryngology, Otology, and Rhinology at the Annual Meetings of the British Medical Association in 1895 (London), 1905 (Leicester), and 1912 (Liverpool) respectively. During the late war he served as registrar of the First Western General Hospital, being subsequently appointed officer in command of the Military Hospital at Whittingham, with the rank of lieutenant-colonel R.A.M.C.(T.). On his retirement from practice in Liverpool he went to reside at Caldy, Cheshire. In 1921 he undertook the duties of honorary dean of the Liverpool School of Tropical Medicine.

The death of Dr. J. T. Thyne in September occasioned a remarkable manifestation of the high esteem in which he was held in Wandsworth and its neighbourhood, and it has been proposed to endow a bed in his memory at the Bolingbroke Hospital. John Tod Thyne received his medical education in Edinburgh, where he graduated M.B., C.M. in 1891. He built up an extensive practice in Wandsworth, where he held the appointments of divisional surgeon of the Metropolitan Police and medical examiner to the borough council. His funeral was attended by about 2,000, and warm support was accorded to the proposed memorial.

We regret to record the death on October 25th of Dr. Griffith Richard Griffith in his eightieth year. He received his medical education at Glasgow University, where he graduated M.B., C.M. in 1876. He practised in Carnarvon for upwards of fifty years, and held several public appointments. He was Justice of the Peace for the borough of Carnarvon, and was for many years a member of the Town Council and chairman of the Sanitary Committee. He was President of the North Wales Branch of the British Medical Association in 1900–1, and vice-chairman and chairman of the North Carnarvon and Anglesey Division in 1906 and 1907 respectively. He retired from practice in 1926.

Dr. Frank Holmes died at Chorlton-on-Medlock, Manchester, on October 21st, at the great age of 92, after more than sixty years of general practice. He received his medical education in Manchester, and obtained the M.R.C.S. diploma in 1865. He was for many years a member of the British Medical Association.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

Dr. A. N. Drury (Gonville and Caius College) has been appointed Huddersfield Lecturer in Special Pathology from October 1st, 1932.

Mr. Geoffrey Keynes, M.D., F.R.C.S. (Pembroke College) has been appointed to the Sandars Readership in Bibliography for 1933.

UNIVERSITY OF LONDON

As a result of the announcement that Major the Hon. John J. Astor, M.P., was the anonymous donor in 1920 of the gift of £20,000 for the endowment of the University Chair of Physiology at the Middlesex Hospital Medical School, the Senate decided on October 26th that the title of this chair shall now be the "John Astor Chair of Physiology." In consequence of the recently announced gift of £1,500 a year for seven years from the Prudential Assurance Company for the endowment of the chair of public health tenable at the London School of Hygiene and Tropical Medicine, this chair will be known as the "Prudential Chair of Public Health" for the duration of the gift.

The degree of D.Sc. in biochemistry was conferred on Dr. E. C. Dodds, Courtauld Professor of Biochemistry at the Middlesex Hospital Medical School.

The University College Committee has elected Sir John Rose Bradford, Bt., M.D., as chairman in succession to Viscount Chelmsford, resigned, and Lord Meston as vice-chairman, until February 28th, 1933.

University College

The dates for the two lectures on "Reflex action," by Sir Charles Sherrington, O.M., G.B.E., F.R.S., have been fixed for November 17th and 24th, at 5.30 p.m. Professor J. Mellanby will take the chair at the first lecture. Admission to the lectures is free, without ticket.

Guy's Hospital

The Sir Alfred Fripp Memorial Fellowship in Child Psychology, tenable at Guy's Hospital, has been awarded to C. H. Rogerson, L.R.C.P., M.R.C.S. It is of the annual value of £300, and has been founded to perpetuate the memory of the late Sir Alfred Fripp, for many years surgeon to the hospital, and later a governor.

London Hospital Medical College

The second open entrance scholarship, value £100, offered by the London Hospital Medical College has been awarded to Mr. F. S. Cosh of the University of Cambridge.

VICTORIA UNIVERSITY, MANCHESTER

Dr. A. N. Birkett has been appointed demonstrator in anatomy.

UNIVERSITY OF GLASGOW

In the list of recipients of the M.D. degree published last week (p. 813) it should have been stated that the first four candidates had been awarded the degree "with high commendation" and the fifth "with commendation."

ROYAL COLLEGE OF PHYSICIANS OF LONDON

A quarterly comitia of the Royal College of Physicians was held on October 27th, with the President, Lord Dawson of Penn, in the chair. Dr. H. C. Cameron, Dr. W. E. Hume, Sir Hubert Bond, and Dr. W. W. Jameson were elected councillors. The following were elected representatives of the College: Dr. H. L. Tidy, as a member of the Committee of Management; Dr. Comyns Berkeley, on the Central Midwives Board; Dr. J. H. Abram, on the Court of Governors of the University of Liverpool; Dr. A. S. Barnes, on the Court of Governors of Birmingham University; and Sir Stanley Woodwark, on the Central Council for District Nursing. The President announced that Sir George Buchanan had been appointed Milroy Lecturer for 1934, and that the Jenks Memorial Scholarship for 1932 had been awarded to Gerald Sutherland Irvine, late of Epsom College.

The FitzPatrick Lectures, on "The development of neurology from the commencement of the nineteenth century to the present time," will be delivered by Dr. James Collier on November 8th and 10th, and the Lloyd Roberts Lecture, on "The liberal education of the body," by Dr. L. P. Jacks on November 22nd, all at 5 p.m.

Membership

The following candidates, having satisfied the Censors' Board, were admitted Members of the College:

Ernest Henry Capel, M.B.Lond., Paul Ward Farmer, jun., M.B.Melb., Clifford Gordon Gordon-Wilson, L.R.C.P., Harold Kingston Graham Hodgson, C.V.O., M.B.Durh., Robert Dennis Harding, L.R.C.P., Reginald St. Alban Heathcote, M.D.Oxf., John Collinson Heather, M.B.Lond., Henry Lovell Hoffman, M.B.Camb., Henry Robert Holmes, M.B.Lond., Max Honigsberger, L.R.C.P., Harry Barlow Jackson, M.B.Lond., Geoffrey Hales Jennings, L.R.C.P., Rajmal Kasliwal, M.B.Lucknow, Eldon Munro Litchfield, L.R.C.P., Herbert Geoffrey McComas, M.B.Lond., Arthur Ian Granville McLaughlin, M.B.Syd., Ian Gideon McLean, M.D.Melb., Willson Alexander McTavish, M.D.Toronto, George Douglas Morgan, L.R.C.P., Richard John Langford O'Donoghue, D.S.O., M.B.Lond., Harold Anstruther Palmer, M.B.Manch., Kallenkarai Naravana Pisharoty, M.B.Madras, William Gordon Robson, M.B.Ed., David Paul Hannaford Schafer, M.B.Melb., Philip Graham Stock, C.B., C.B.E., M.B.Bristol, Ramaier Viswanathan, M.D.Madras, John Frederick Wilkinson, M.D.Manch., and John Alan Bruce Young, M.B.Ed.

Licences

Licences to practise were conferred upon the following 130 candidates (including 17 women) who have passed the final examination in medicine, surgery, and midwifery of the Conjoint Board and have complied with the necessary by-laws:

Mary-Ann C. Adams, R. M. Alford, J. C. G. Anderton, H. J. B. Atkins, R. H. Bailey, Helen Baker, N. J. Bakhru, J. B. Bamford, P. Baron, S. A. Bather, T. P. Binns, M. S. W. Bisdee, E. N. Brockway, Doris B. Brown, R. C. Brown, R. H. Brown, W. M. Capper, P. K. Chanmugam, E. M. Clark, C. A. Clarke, C. C. Cobb, J. C. Colbeck, N. C. Coombs, S. W. Cooper, S. M. Cruz, A. R. Cutlack, Joan M. C. Dancy, A. L. Davies, Doris A. Dean, R. A. Desai, Phyllis M. Dobbs, Joan C. Drury, Evelyn M. Eggleton, G. M. Evans, R. C. Evans, J. Fishman, L. P. Fitch, Fanny C. Fraser, T. H. Gardener, D. W. Geidt, W. G. Gill, J. A. S. Goonawardena, W. B. Gough, E. H. B. Grey, H. C. P. Gunewardene, B. P. Harris, Augusta G. Harrison, C. L. Hay-Shunker, O. S. Heyns, E. A. Hoare, Phyllis L. Holliday, H. D. Holt, A. W. J. Houghton, T. G. F. Hudson, Elizabeth M. Hutton, W. A. Hyslop, R. James, N. D. Jekyll, Ruby D. Johnson, W. H. Jones, F. R. Kitchin, R. G. Knight, S. Levontin, B. S. Lewis, W. Lewis, D. P. Lockhart, Barbara R. Lockwood, J. Lubran, J. J. McCann, D. C. McClure, D. U. MacDonald, M. B. McGinn, S. A. MacKeith, V. S. Majmudar, K. Malik, J. B. Maurice, I. R. W. Merrick, C. J. Morgan, F. P. Morgan, *H. F. Moseley, N. J. S. Nathan, G. F. O'Connor, Elizabeth M. Ogden, G. Y. Oon, M. W. L. Owen, R. Q. Parkes, R. V. Payne, H. E. Pearse, C. J. P. Pearson, G. E. Phillips, R. W. Pickering, W. S. Pitt-Payne, E. C. Powell, F. J. P. Price, R. G. Pulvertaft, F. Ridehalgh, A. E. A. Ridgway, B. F. B. Russell, H. K. B. Rustogi, V. M. Seifert, M. Shankhla, B. Sharma, R. T. Shipman, S. C. Shore, J. P. Singer, H. Singh, V. C. Snell, W. H. C. Spooner, E. J. Stubbs, R. Sykes, J. W. C. Symonds, A. E. Terry, Jessie A. Thirtle, H. H. Thompson, J. R. Thornton, T. M. Tyrrell, Patricia I. Unsworth, H. B. D. Vaughan, C. B. M. Warren, W. H. C. Watson, G. C. Welply, J. H. West, H. M. Williams, H. V. Williams, H. R. I. Wolfe, L. J. Wolfson, T. G. R. Woods, S. W. Wright, H. W. Wykes, K. E. L. Yuill.

* M.R.C.S. previously granted.

Diplomas in Public Health were granted, jointly with the Royal College of Surgeons, to the following:

N. D. Begg, R. Evans, J. Galea, P. Henderson, C. B. Huss, Dorothy M. James, E. T. James, H. N. C. van G. Kelaart, Ira B. Lawrence, W. D. Lovelock-Jones, B. S. Nanjiani, T. St. M. Norris, J. A. D. Radcliffe, R. E. Robinson, L. A. S. Trott.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

Surgery.—G. W. Aston, F. W. Baskerville, R. N. O'D. Burns, M. B. Chandulal, W. E. P. Corbett, C. H. Fagge, F. M. F. Forrest, A. J. McBrearty, M. N. Mandelstam, J. W. Meyers, A. E. A. Ridgway, H. Shukry, R. H. Wheeler.

Medicine.—J. L. Bates, E. F. David, J. O. Gordon, J. Harris, E. J. Littledale, A. J. McBrearty, S. Pugmire, H. Shukry, M. Sourasky.

Forensic Medicine.—E. L. Burgess, J. L. Cope, K. M. Hahn, J. E. Morrish, S. Pugmire, P. J. Purcell, H. Shukry, B. K. Siddhante.

Midwifery.—F. M. F. Forrest, K. M. Hahn, D. Kyle, P. J. Purcell, B. K. Siddhante, R. C. P. Thomas.

The Diploma of the Society has been granted to Messrs. R. N. O'D. Burns, M. B. Chandulal, C. H. Fagge, A. J. McBrearty, M. N. Mandelstam, J. W. Meyers, S. Pugmire, A. E. A. Ridgway.

Medical Notes in Parliament

[From our Parliamentary Correspondent]

The House of Commons this week passed the Ottawa Agreements Bill through all remaining stages, and began a general debate on unemployment.

Ottawa Agreements: Cod-liver Oil

During the committee stage of the Ottawa Agreements Bill, on October 31st, Mr. G. Hall moved an amendment to exempt linseed, linseed oil, cod-liver oil, and castor oil from the duties. He said that cod-liver oil was in use in almost every working-class household, and local authorities spent considerable sums in purchasing bulk supplies for hospitals and sanatoriums. These authorities were concerned as to the increase in price which would result from this new imposition. In a letter to the *Times* of October 8th, Mr. Gamble, a director of Allen and Hanburys, had said that the quantity of medicinal cod-liver oil produced in this country was negligibly small, and could not be increased to any considerable extent. He pointed out that the preference under the Ottawa Agreements took the form of a flat rate per gallon equivalent to about 40 per cent. on the value of medicinal cod-liver oil, and 60 per cent. on the lower grade for animal-feeding purposes. Mr. Hall added that in the opinion of the Opposition the increased price would inevitably affect those children and adults for whose ailments doctors prescribed cod-liver oil.

Dr. Burgin said that the ordinary method under which medicinal cod-liver oil was sold in a retail chemist's establishment was in an eight-ounce bottle. Taking the duty at the level proposed by the Ottawa Agreements, it would work out at a penny on an eight-ounce bottle, but there was no reason why that penny should be put on to the retail price at all. Including the duty, the cost price of the oil was 4d. per eight-ounce bottle, and this was sold over the counter at 1s. 6d. There were plenty of reasons available, from the profits of those concerned in the industry, why the addition of the extra penny to the retail price of 1s. 6d. could not be justified.

The amendment was defeated by 266 votes to 61.

Silicosis

Sir John Gilmour told Mr. Jamieson, on October 27th, that since June 1st, 1931, when the Silicosis and Asbestosis (Medical Arrangements) Scheme came into force, 1,535 workmen in the asbestos industry in England and Wales and eighty in Scotland had been examined under the scheme. The total amount paid by employers to the Medical Expenses Fund in respect of these examinations was £2,300. Certificates of total disablement or suspension on account of asbestosis, or asbestosis accompanied by tuberculosis, had been issued in thirty cases in England and Wales and two in Scotland. Sir John hoped that the cost of administration would be materially reduced in future, and he considered that the new experiment was fully justified.

Outbreak of Typhoid in Yorkshire

On November 1st Mr. Shakespeare informed Mr. Turton that eighty-eight cases of typhoid fever were known to have occurred at Malton up to and including October 30th. The Minister of Health was unable to say anything about the condition of individual patients, except that three of the patients had died. Patients were being treated in the fever hospitals at York and Driffield, and in the cottage hospital at Malton, which had been temporarily appropriated for the purpose. As the Minister was at present advised, the infection appeared to have been water-borne, but he would communicate further with Mr. Turton when he had received the report of his medical officer, who had been investigating the outbreak.

Defective Eyesight in Young Persons.—Replying, on October 27th, to Mr. Lovat-Fraser, Sir Hilton Young agreed that the report of the recent investigation by the Ministry of Labour into the question of unemployment among boys and girls under the age of 18 stated that the chief defect in both sexes was poor eyesight. Work for the preservation of eyesight and the prevention of blindness was already being done under the maternity and child welfare and school medical services. The whole problem was at present under the consideration of two committees, one of which was appointed by the Board of Education.

Fatal Cases of Small-pox and Vaccination.—Sir Hilton Young told Mr. Groves, on October 27th, that there were four deaths among the small-pox cases tabulated in the report of the chief medical officer of his Department for the year 1931. These deaths were distributed as follows: successfully vaccinated, two deaths of persons aged 55 and 63 years respectively; successfully revaccinated, no deaths; unvaccinated, two deaths of persons aged 1 week and 7 years respectively; vaccinal condition doubtful, no deaths.

Maternal Deaths: Inquiries by Local Authorities.—On October 27th, in reply to Mr. Lunn, Sir Hilton Young said that he had recently taken steps to secure the continuance of the system of confidential inquiries into the circumstances of maternal deaths in accordance with the recommendation of the Committee on Maternal Mortality. So far as the work of local authorities was concerned the final report of this committee confirmed the recommendations made in the interim report. These had been communicated to the local authorities, and action had already been taken in many districts. He was considering what further action could most usefully be taken.

Proposed Investigation into Causes of Fatal Road Accidents.—Mr. Pybus told Sir Bertram Falle, on October 26th, that he had brought to a final stage the arrangements for a special investigation of the causes of fatal road accidents over a period long enough to give definite and reliable results. A form of return had been prepared for use by all police forces in reporting fatal accidents. He believed that by a more complete diagnosis of the causes of fatal accidents it would be possible to devise more effective methods to reduce their number.

Notes in Brief

The Slaughter of Animals Bill, which received a first reading earlier in the session, has been withdrawn, as has also the Exportation of Horses Bill.

The Services

No. 14 STATIONARY HOSPITAL DINNER

The thirteenth annual dinner of the medical officers of No. 14 Stationary Hospital will be held at the Trocadero Restaurant, Piccadilly, on Friday, December 9th, at 7.15 for 7.45 p.m., with Colonel C. R. Evans in the chair. The honorary secretaries are Dr. H. L. Tidy and Colonel H. M. Perry (39, Devonshire Place, W.1).

DEATHS IN THE SERVICES

Lieut.-Colonel Damodar Purshotam Warlikar, Madras Medical Service (ret.), died in a nursing home in London on September 27th, aged 78. He was born on July 17th, 1854, took the M.R.C.S. and L.S.A. in 1877, and entered the I.M.S. as surgeon on March 30th, 1878. He became surgeon lieutenant-colonel after twenty years' service, was placed on the selected list on April 12th, 1905, and retired on July 1st, 1908. He served in the Rumpa rebellion of 1878–80, in the Khond rebellion of 1882, and in the Burma war in 1886–8, receiving the frontier medal with two clasps. He also rejoined for service in the war of 1914–18, from February 8th, 1915, to May 29th, 1921.

Lieut.-Colonel Andrew Baird, R.A.M.C.(ret.), died on September 7th, a few days before attaining the age of 74. He was born at Glasgow on September 17th, 1858, and was educated at Aberdeen University, where he graduated M.B. and C.M. in 1880, and at St. Mary's, taking also the M.R.C.S. in 1880, and ten years later the F.R.C.S.Ed. Entering the Army as surgeon on February 3rd, 1883, he

became lieutenant-colonel after twenty years' service, and retired on October 3rd, 1903. He served in the Bechuanaland expedition of 1884–5; in operations in Zululand in 1888, and in the Chitral campaign of 1895, receiving the frontier medal with a clasp. He then served throughout the South African war of 1899–1902, through the campaign for the relief of Ladysmith, including the actions of Colenso, Spion Kop, Vaal Krantz, Tugela Heights, Pieters Hill, and the final relief of Ladysmith; in operations in the Transvaal, in Natal, including action at Laing's Nek, and in the Orange River Colony; he was mentioned in dispatches in the *London Gazette* of February 8th, 1901, and received the Queen's medal with six clasps and the King's medal with two clasps. After his retirement he was re-employed at Worcester from 1903 to 1916, and after the war as a deputy commissioner of medical services under the Ministry of Pensions.

Lieut.-Colonel William John MacNamara, R.A.M.C. (ret.), died at Herbert Park, Dublin, on October 11th, aged 78. He was born on August 30th, 1854, and was educated at Queen's College, Galway, and the Carmichael Medical School, Dublin, and graduated B.A. in 1875, and M.D. and M.Ch. in 1878 of the Queen's University, Ireland. Entering the Army as surgeon on July 31st, 1880, he became lieutenant-colonel after twenty years' service, and retired on July 11th, 1906. From August 2nd, 1896, to August 16th, 1901, he was employed as deputy surgeon of the Royal Hospital, Chelsea. He served in the South African war in 1901–2 as principal medical officer of No. 7 General Hospital, took part in operations in Cape Colony, the Orange River Colony, and the Transvaal, and received the Queen's medal with five clasps. After retirement he was employed as recruiting medical officer in Dublin in 1908–9.

Medical News

The annual Buckston Browne dinner of Fellows and Members of the Royal College of Surgeons of England will be held at the College, Lincoln's Inn Fields, on Thursday, November 10th.

The annual dinner of the Prince of Wales's Hospital Reunion Association will be held at the Trocadero Restaurant, Piccadilly Circus, W., on Thursday, November 24th, at 7.45 for 8 p.m., with Dr. C. E. Sundell in the chair. Price of dinner (exclusive of wines), 12s. 6d.; no tickets will be issued. Those intending to be present are asked to notify the honorary secretary, Dr. Bertram H. Jones, 47, Queen Anne Street, W.1, stating number of guests.

The annual dinner of the Irish Medical Schools' and Graduates' Association will be held at the Dorchester Hotel, London, W., on Thursday, November 24th, with the president, Dr. F. Howard Humphris, in the chair.

The British Institute of Philosophy announces that Sir Arthur S. Eddington will deliver an address on "Physics and philosophy" at University College, Gower Street, W.C., on Tuesday, November 15th, at 8.15 p.m. The chair will be taken by the Earl Russell. Tickets can be had on application to the Director of Studies, University Hall, 14, Gordon Square, W.C.1.

At the meeting of the Royal Sanitary Institute to be held at 90, Buckingham Palace Road, S.W., on Tuesday, November 29th, at 5.30 p.m., a discussion on clearance areas and improvement areas will be opened by Dr. James Fenton, medical officer of health for Kensington. Lord Balfour of Burleigh, the president of the Institute, will take the chair.

At the meeting of the Pharmaceutical Society to be held at 17, Bloomsbury Square, on Tuesday, November 8th, at 8.30 p.m., the new *British Pharmacopoeia* will be discussed by Dr. C. H. Hampshire, secretary to the Pharmacopoeia Commission. Medical visitors will be welcomed.

The fourth of a series of lectures on renal disease, arranged by the Fellowship of Medicine and Post-Graduate Medical Association, will be given at the Medical Society of London, 11, Chandos Street, W.1, on November 8th, at 4 p.m. There will be a course in practical pathology at the Hospital for Consumption, Brompton, on Thursdays, from November 10th to December 1st, at 11.45 a.m.; arrangements will be made for members of the class to perform tests themselves. The last of a series of demonstrations on clinical pathology will be given at 10, Bedford Square, W.C.1, on November 9th, at 8.30 p.m. Cases of general interest will be demonstrated on November 18th at 2 p.m. at the Lambeth Hospital, Brook Street, S.E.11. Six lecture-demonstrations on diagnosis and treatment of chronic rheumatism will be given at the British Red Cross Clinic for Rheumatism, Peto Place, N.W.1, on Tuesdays and Thursdays at 8.30 p.m., from November 22nd to December 8th. Mr. Lindsay Rea will give a demonstration on the fundus oculi on November 22nd at 8.30 p.m. at the in-patient department of the West End Hospital for Nervous Diseases, Gloucester Gate, N.W.1.

The British Social Hygiene Council has arranged a national conference on "The place of biology in education," to take place in B.M.A. House, Tavistock Square, on Wednesday, November 30th, and Saturday, December 3rd. The sessions begin in the morning at 10.30 and in the afternoon at 2.30. On the afternoon of Thursday, December 1st, under the chairmanship of Sir Henry Brackenbury, the problem of the social control of the feeble-minded child leaving the ordinary elementary school will be discussed at a joint session with the Central Association for Mental Welfare. Further particulars can be obtained from the secretary-general, British Social Hygiene Council, Carteret House, Carteret Street, S.W.1.

An international congress of ophthalmology will be held in Madrid in April, 1933. Abstracts of articles to be read at the congress should be sent to the secretary, Dr. F. Poyales, Olazaga 3, Madrid.

The first meeting of the new session of the Hunterian Society was held on October 17th, when Dr. Nathan Raw delivered the presidential address, on human and bovine tuberculosis. At the meeting of the society on November 21st, at Apothecaries' Hall, a discussion on "The influence of faith on disease" will be opened by the Rev. Father Woodlock, Dr. Robert Hutchison, and Dr. William Brown. A discussion on radium in medical diseases will be opened by Dr. Howard Humphris and Dr. W. J. O'Donovan at the meeting at Simpson's Restaurant, Cheapside, on December 19th. The Hunterian Lecture, on experimental and clinical studies of gastric juice, will be delivered by Dr. Einar Thomsen (Copenhagen), on January 16th, 1933, and Sir T. Crisp English will give the Hunterian Oration on "The language of facts," on February 27th. The annual dinner of the society, at the May Fair Hotel, is arranged for February 9th.

The thirty-sixth session of the Chelsea Clinical Society opened on October 16th. The following discussions have been arranged:—November 15th, Dr. E. Bray: Non-specific protein therapy; December 13th, M. Marcel Boulestin: Voracity, veracity, and vitamins; January 17th, 1933, Dr. H. T. Young, medical officer, Wormwood Scrubbs Prison: Character defects in young delinquents; February 21st, Dr. Harold G. Taylor: Contraception; March 21st, Sir Percy Sargent: Sex and the pituitary gland (lantern demonstration); April 18th, Mr. A. Lawrence Abel: Surgery of the autonomic nervous system (cinematograph demonstration); May 16th, Dr. Kenneth E. Eckenstein: Cranks, quacks, and magicians. The meetings, which will be held at the Hotel Rembrandt, Thurloe Place, S.W., will be preceded by dinner, at 7.30 p.m.

As announced in our advertisement pages the Grocers' Company are offering scholarships, each of £300 per annum, to encourage original research in sanitary science. The scholarships are tenable for one year, but are renewable for a second or third year subject to conditions. An allowance is also made to meet the cost of apparatus and other expense in connexion with the work. The next next election takes place in May, 1933.

At the recent Municipal Election in Bournemouth, Dr. Arthur Lee was returned unopposed to the Town Council as a representative for the West Cliff Ward.

On October 29th Dr. W. Langdon Brown, Regius Professor in Physic in the University of Cambridge, laid the foundation-stone of the new science buildings at Bedford School. The ceremony was presided over by Sir Maurice Craig, chairman of the governors. Both Professor Langdon Brown and Sir Maurice Craig are Old Bedfordians.

The new out-patient department of the Infants Hospital, Vincent Square, Westminster, was opened on October 31st by its president, the Princess Royal, who also unveiled a tablet in the waiting-hall. Sir Robert Mond, in seconding a vote of thanks to Her Royal Highness, said that it was twenty-five years since he built the hospital, and it was a great satisfaction to know that its capacity would be doubled. Dr. Eric Pritchard, the medical director, said that the hospital is equipped with all the latest instruments and machinery ; far from being a luxury, it had become a clear necessity, inasmuch as no private individual or institution could afford to purchase and maintain the equipment. Particulars of the extension of the hospital were published in our issue of October 8th (p. 678).

Attendances during September at the Red Cross Clinic for Rheumatism, Peto Place, numbered 6,091, as compared with 5,770 in September, 1931, and 2,684 in September, 1930. The total number of treatments given on the " general " floor during the month were 4,449 to women and 3,344 to men. The maximum daily number of treatments during the month were respectively 299 and 221. Increasing use is also being made of the clinic by private patients. In September nearly a thousand treatments were given on the " private " floor. Provision is now made in the clinic for remedial exercises in a well-equipped gymnasium. This equipment was provided by the staff themselves as a donation to the more effective carrying out of the work.

The *Bruxelles-Médical* announces that a medical cruise will be organized next Easter, leaving Marseilles on April 8th, and returning to Marseilles on May 1st. The itinerary includes visits to Sicily (Messina and Taormina), Greece (Olympia, Corinth, Mycenae, Argos, Athens, Delphi, Parnassus, Ithaca), Corfu, St. John of Medua (Scutari), Cattaro (Cettigné), Ragusa, Spalato, Fiume, Venice, Porto-Corsini (Ravenna), Civita Vecchia (Rome), and Ile Rousse (Corsica). No passengers other than medical practitioners and their families, or persons recommended by their family doctors, may be booked for the cruise. A scale of medical contract prices (3,975 French francs first class, and 2,100 second class), inclusive of all costs, has been fixed. Many optional excursions will be arranged. A steamer has been chartered with 190 first-class berths and sixty berths for students. Early application should be made to the Section des Voyages de Bruxelles-Médical (29, Boulevard Adolphe Max, Brussels), from which full information may be obtained.

The Lords Commissioners of the Treasury, acting on a recommendation from the Import Duties Advisory Committee, have made a Statutory Order exempting from the provisions of the Import Duties Act, 1932, ipecacuanha root, crude araroba (Goa powder, used in the production of chrysarobin), pyrethrum flowers (used in the production of insect powder), and coca leaves.

The seventh French Congress of Stomatology was held at the Paris Faculty of Medicine, with M. Edouard Herriot, Minister of Foreign Affairs, as president of honour. The subjects discussed were non-specific osteitis of the upper jaw, introduced by Drs. Cadenat and Vilenski, and cervico-facial mycoses, introduced by Dr. Dechaume.

Colonel Alexander James MacDougall, C.M.G., R.A.M.C. (ret.), and Surgeon Lieut.-Colonel Alexander Kenneth Stewart, I.M.S. (ret.), have been appointed Deputy Lieutenants for the County of Argyll.

The German beer consumption for the year 1931–2 was 37,093 million hectolitres, or 23.5 per cent. less than in the previous year. The expenditure amounted to at least 2,569 million marks, which after subtraction of the beer tax became 2,200 million marks.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are MUSEUM 9861, 9862, 9863, and 9864 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL, Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin* ; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh* ; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Seborrhoea of Scalp

Dr. F. A. Brodribb (Yattendon, Berks) writes in reply to " E. S. C.": If he will take a 6-ounce poison bottle and fill it with one B. and W. perchloride tabloid, 2 ounces of glycerin, 2 ounces of spirit vin. rect., and 2 ounces of water, and rub the lotion thus made into the roots of the hair all seborrhoea will disappear in a few days.

Income Tax

Owners of Government Annuities

" M. R." points out that when he purchased a Government annuity there was an arrangement in force under which tax was deducted at half the standard rate only, but nowadays tax is deducted at the full rate. Is not this a breach of agreement?

*** The position appears to be as follows. The arrangement to which " M. R." refers never affected the *ultimate* liability of the annuitants, which is governed by statute law. What it did was to reduce the amount of tax paid *by deduction*, with the result that annuitants who were not liable for the full standard rate on their incomes had less to claim back, and were therefore kept out of less money for some months. Apparently, as a result of the lowering of the exemption and personal allowance levels, the lists of annuitants have been revised, and it would seem that " M. R." is probably an annuitant whose income is such that the whole or substantially the whole of the standard rate tax is due on his annuity. If so he has no ground for complaint, bearing in mind that his liability has to be determined on his total income, and that the tax paid by deduction from his annuity is, so to speak, an instalment of that total tax.

Gift on Relinquishing Appointment

" S. M." resigned his post as medical officer of a private institution, and the board of management gave him a cheque for £66 7s. 6d. as a parting presentation. Is it liable to income tax?

*** The point is a difficult one, and a good deal turns on the exact circumstances. The Easter offerings of clergymen have been held to be liable to tax, though private gifts by parishioners would presumably be exempt. If the amount received by " S. M." were voted out of the funds of the institution it would be more open to assessment than if it were provided out of the private resources of the members of the board—in the latter case our opinion would be that the amount would not be assessable. The amount provided by a " benefit " and subscriptions for a retiring professional cricketer was held by the House of Lords not to be chargeable to income tax, and there is some analogy between that case and our correspondent's. We advise him

to explain the circumstances fully to the inspector of taxes and press his contention that there is no adequate ground in law for the assessment of the sum in question.

Expense of Locumtenent

"K. L." is a dispensary doctor in Northern Ireland. The board of guardians allows him a month's holiday, and pay a locumtenent £4 4s. per week. The locumtenent does "K. L.'s" panel work as well, and "K. L." bears the cost of his board and lodging. The inspector of taxes refuses "K. L.'s" claim to deduct that expense.

*** The legal position is that "K. L." is not entitled to deduct the expense in arriving at his liability under Schedule E, but presumably the "panel" profits are assessed under Schedule D, and it seems fairly clear that both law and practice would support his claim to deduct the board and lodging cost in calculating the Schedule D liability on the panel practice.

Cash Basis

"O. L. M." has been assessed on the cash basis ever since he has been in practice—in four districts. The inspector of taxes now insists on changing over to the cash basis as adjusted by the value of outstanding debts as from January next. Can he resist this?

*** The inspector's attitude is legally correct, and the assessment of medical profits on a cash basis is a matter of convenience and concession only. Consequently "O. L. M." cannot very well press his resistance to a formal appeal. At the same time there is a fairly general understanding that the cash basis shall not be disturbed in cases where the profits do not show a tendency to increase—and where accordingly the change in basis would give trouble and bring in no advantage to the revenue—and "O. L. M." might emphasize that aspect of the question with advantage.

Replacement of Car—Obsolescence

"L. H. B. M." bought a car for £430 in 1929 and has been allowed depreciation in respect of it at 20 per cent. for the years 1930–1, 1931–2, and 1932–3—apparently to an aggregate amount of £86+£69+£55=£210. He sold it last September for £110, buying in its place two cars costing £345 and £125 respectively. What allowances should he claim and for what year?

*** The allowances should be claimed as for the year 1933–4, and are as follows:

Obsolescence Allowance:		
Original cost price of car		£430
Deduct—Aggregate depreciation allowances ...	£210	
Amount received on sale...	£110	
		£320
Amount of obsolescence allowance to be treated as a professional expense of the year 1932		£110
Depreciation Allowance:		
Cost price of cars (£345 + £125)		£470
Allowance at 20 per cent.		£ 94
Value to carry forward		£376

LETTERS, NOTES, ETC.

Treatment of Erysipelas

Dr. E. T. LARKAM (Birmingham) writes: In your issue of October 15th Drs. Schlesinger and Fraser, in reporting a case of erysipelas, state that "ringing round an inch from the spreading edge with tr. iodi fortis had not the slightest effect." For many years past I have treated erysipelas, with excellent results, by applying lint soaked in a 15 per cent. solution of ichthyol in glycerin, deeply ringing round the advancing margin with the strong solution of perchloride of iron (*B.P.*) twice daily for three or four days. I have found strong tincture of iodine to be totally ineffective.

Witch-burning

Professor D. F. FRASER-HARRIS writes: May I correct the date of the burning of the last witch in Scotland as given by your reviewer of *The Lame, the Halt, and the Blind* (October 29th, p. 800). The date was 1722, not 1727. I happen to possess a copy of a work, *Old Dornoch: Its Traditions and Legends*, by H. M. MacKay, town clerk (privately printed, 1920). In Chapter III (p. 95) we are told that the name of this poor creature was Janet Horn, and that she was burnt alive after being covered with tar. It is almost incredible that in this country so late as 1722 a human being should have received such treatment at the hands of "the authorities," but it is one more proof of the lengths to which pious people will go when they believe they are doing something praiseworthy, for was it not written: "Thou shalt not suffer a witch to live"? Janet Horn was duly tried in Dornoch, the county town, by the sheriff-depute of the county of Sutherland.

Medical Pundits

Sir ERNEST GRAHAM-LITTLE writes: In your editorial (October 29th) you imply some bewilderment as to how addresses given by me reach the public press. The explanation is entirely simple, and has already been made by me in the *British Medical Journal Supplement* (November 22nd, 1930), when I mentioned that some years ago I received an invitation from the managing director of one of the leading press agencies in London to furnish his agency with an advance summary of any public lecture I proposed to give. I happen to be the only medical representative in Parliament of British universities; I am the sole representative of my university, and it is the largest in the British Empire, if not in the world, with some 24,000 students now registered as reading for its degrees. Doubtless it is this circumstance, and not my own qualities, that accounts for the invitation, which I accepted, and which is still in operation. The agency selects without consultation with myself the portions of the address which it will furnish to the press, and on this occasion it happens that one subject forming a relatively small part of my address was so selected—namely, my comment on the action taken by the Council of the British Medical Association in concert with other bodies to prevent or restrict the granting of medical patents.

*** The rest of Sir E. Graham-Little's letter is irrelevant to the point at issue.

Thyroideum Siccum "B.P. 1932"

Dr. H. A. MITCHELL (Evans' Biological Institute, Runcorn) writes: A certain amount of confusion has arisen in respect of this product, which is now to be assayed on a new basis. This new basis does not bear any constant relation in successive batches to the total iodine content of the gland, and our ideas with regard to dosage must be amended accordingly. This present communication, however, refers to the standard now laid down. This states that it shall contain 0.1 per cent. of iodine in combination as thyroxine, and not more inorganic iodine than 10 per cent. of the content of total iodine. The iodine content of thyroid gland is made up, partly of inorganic iodine, but mainly of iodine in organic combination. This organic iodine occurs in two forms—namely, as thyroxine, and as acid-soluble di-iodotyrosine, this latter being physiologically inert. The *B.P.* requirement is satisfactory in so far as the thyroxine content is concerned, but it is assumed in describing the assay of inorganic iodine that it is only this which is water-soluble. Harrington and Randall (*Quart. Journ. Pharm.*, 1929, p. 501) also assume that in drying thyroid the iodothyroglobin is denatured and so rendered insoluble in water. In actual practice this is only correct if the temperature of drying is sufficiently high. The *B.P. 1932* fixes an upper limit of 60° C. for this drying, but makes no mention of a lower limit, leaving one to conclude that therefore the drying should be carried out at the lowest possible temperature in order that as little change as possible due to heat will be caused. Yet if thyroid gland be dried at a temperature of, say, 40° to 45° C., the organic iodine is not denatured, and consequently remains water-soluble. It appears, therefore, that thyroid dried at low, and what I describe as optimum, temperatures will not conform with the new *B.P.* requirement, but must be heated up to a considerably higher temperature than is actually necessary for drying. One may argue that denatured protein is more readily assimilated by the gastro-intestinal tract, and that therefore one would get more rapid absorption, but in the presence of a certain amount of empiricism is it advisable to heat a substance unnecessarily, with its resultant chemical change, the exact therapeutic action of which is even yet not clearly understood?

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 52, 53, 56, and 57 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 243.

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